User Guide

IP66 Stainless Front Panel Mount Touch Panel PCs with Intel® Atom™ processor N455 1.66 GHz

Human Machine Interface Panel 10.4" / 15" / 17”

IP10IA99 / IP15IA99 / IP17IA99 Panel PC series

Table of Contents

1. Introduction ----- 5
1.1. Symbols used in this Manual ----- 7
2. Important Instructions ----- 8
2.1. Note on the Warranty ----- 8
2.2. Exclusion of Accident Liability Obligation ----- 8
2.3. Liability Limitation / Exemption from the Warranty Obligation ----- 8
3. Safety Instructions ----- 9
3.1. Electrostatic Discharge (ESD) ----- 10
3.2. Grounding Methods ----- 10
3.3. Instructions for the Lithium Battery ----- 10
3.4. FCC Statement ----- 10
3.5. Electromagnetic Compatibility ----- 11
4. Goods of Delivery ----- 12
4.1. Label and Product Identification ----- 13
5. Product Description ----- 15
5.1. Front Side ----- 17
5.1.1.10.4"/15"/17" Display with Touch Screen ----- 18
5.1.2. Front Panel Care and Cleaning (Chemical Resistance) ----- 18
5.2. Bottom View ----- 19
5.3. Power, Control Indicators, Reset and Grounding ----- 20
5.3.1. Power Connector .... ----- 20
5.3.1.1. Power Button and Power LED ----- 20
5.3.1.2. Reset Button ----- 22
5.3.1.2. HDD LED ----- 22
5.3.2. Interfaces (Rear, Bottom Side of the System) ----- 22
5.3.2.1. USB Connectors ----- 23
5.3.2.2. COM Serial Interface Connector ----- 23
5.3.2.3. LAN1 and LAN2 Ethernet Interface Connectors ----- 23
5.3.2.4. VGA Interface Connector ----- 23
5.4. Top View ----- 23
5.5. Left and Right Side View ----- 24
5.6. Rear View ----- 25
5.7. DC or AC Power Connection. ----- 25
5.7.1. DC Power Cable. ----- 26
5.7.2. External AC/DC Adapter (Optional) ----- 26
5.8. Accessing Internal Components ----- 27
6. System Installation ----- 27
6.1. H/W Installation ----- 27
6.1.1. Jumpers ----- 27
6.1.2. Connector ----- 30
6.1.3. Memory module Installation ----- 34

6.1.4. Serial ATA Hard Disk Installation. ---- 35
6.1.5. CF Card Installation ---- 36
6.1.6. DC Power Input Installation ---- 37
6.2. Panel and External AC/DC Adapter Mounting ---- 37
6.2.1. Panel Mounting ---- 37
6.2.2. VESA Mounting. ---- 41
6.2.3. Wall Mounting of the External AC/DC Adapter ---- 41
6.3. Getting started ---- 42
6.3.1. Connecting to DC Power Source ---- 42
6.3.2. Connecting to AC Power Source via the AC/DC Adapter ---- 44
6.4. BIOS Setup ---- 45
6.4.1. Entering Setup -- Launch System Setup ---- 45
6.4.2. Main ---- 45
6.4.3. Information ---- 46
6.4.4. Configuration ---- 47
6.4.5. Boot ---- 59
6.4.6. Security ---- 60
6.4.7. Save and Exit ---- 61
6.5. Software Installation ---- 62
6.5.1. Calibration the Touch Screen ---- 62
6.5.1.1. Calibrating the Touch Screen ---- 62
6.5.1.2. Calibrate the Touch Screen ---- 62
6.5.2. Brightness Control ---- 65
7. Technical Data ---- 67
7.1. Product Specifications ---- 67
7.2. Mechanical Specifications ---- 67
7.3. Certifications and Standards ---- 74
8. RMA (Return Material Authorization) Service ---- 75

List of Figures

Fig.4-1: Label on the unit ---- 13
Fig.5-1: Top view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-2: Right view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-3: Front view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-4: Left view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-5: Bottom view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-6: Rear view of the IP15IA99 Panel PC System (15") ---- 15
Fig.5-7: Top view of the IP10IA99 Panel PC System (10") ---- 16
Fig.5-8: Right view the IP10IA99 Panel PC System (10") ---- 16
Fig 5-9: Front view of the IP10IA99 Panel PC System (10") ---- 16
Fig.5-10: Left view the IP10IA99 Panel PC System (10") ---- 16
Fig.5-11: Bottom view of the IP10IA99 Panel PC System (10") ---- 16
Fig.5-12: Rear view of the IP10IA99 Panel PC System (10") ---- 16
Fig.5-13: Front view of the IP15IA99 Panel PC System (15") ---- 17
Fig.5-14: Chemical resistance for the area of textured paint ---- 18
Fig.5-15: I/O View ---- 19
Fig.5-16: DC Power connector on the bottom (rear) side of the OIC Panel system ---- 20
Fig.5-17-1: Close-up on front panel of 10"/15"/17", Power button and LED as power indicator ---- 21
Fig.5-17-2: Close-up on I/O of 10"/15"/17", Power LED and Reset button ---- 21
Fig.5-18: Adjust the switch ---- 21
Fig.5-19: I/O interface ---- 22
Fig.5-20: Expansion I/O on 15'/ 17" ---- 22
Fig.5-21: Expansion I/O on 10.4" ---- 22
Fig.5-22: Rear side of the system (shown as 10.4" IP10IA99) ---- 23
Fig.5-23: Right side of the 10.4" IP10IA99 ---- 24
Fig.5-24: Left side of the 10.4" IP10IA99 ---- 24
Fig.5-25: Rear side of the system (shown as 10.4" IP10IA99) ---- 25
Fig.5-26: External Open Lead Cable supplied with the IPxxIA99 Panel system ---- 26
Fig.5-27: External AC/DC 24V/75W adapter supplied with the IPxxIA99 Panel system ---- 26
Fig.6-1: Top-side Jumper and Connector Locations ---- 28
Fig.6-2: Installation of Memory ---- 34
Fig.6-3: The procedure of HDD installation ---- 35
Fig.6-4: Side View of CF Card Insertion ---- 36
Fig.6-5: Power adaptor installation ---- 37
Fig.6-6: Cut-out definition ---- 37
Fig.6-7: Panel cut-out dimension for IP10IA99 ---- 38
Fig.6-8: Panel cut-out dimension for IP15IA99 ---- 38
Fig.6-9: Panel cut-out dimension for IP17IA99 ---- 39
Fig.6-10: Mounting kit step by step ---- 40
Fig.6-11: Inside of the wall mount plate for the AC/DC adapter ---- 41
Fig.6-12: Housing for the AC/DC adapter (only for wall mounting) ---- 41
Fig.6-13: Rear side of the mounting plate without DIN Rail clip ---- 41

Fig.6-14: Mounting plate with DIN Rail clip ---- 41
Fig.6-15: Connecting to DC power source with open lead cable ---- 42
Fig.6-16: Connecting to AC power source via the AC/DC adapter ---- 44
Fig.6-17: Setup Program Initial Screen ---- 45
Fig.6-18: System Information ---- 46
Fig.6-19: Setup Program Initial Screen ---- 47
Fig.6-20: ACPI Configuration ---- 48
Fig.6-21: CPU Configuration ---- 48
Fig.6-22: USB Configuration ---- 50
Fig.6-23: SATA Configuration ---- 50
Fig.6-24: Integrated Video Configuration ---- 52
Fig.6-25: GMCH BLC Control ---- 52
Fig.6-26: LAN Configuration ---- 53
Fig.6-27: W83627UHG Serial Port 1 Configuration ---- 54
Fig.6-28: W83627UHG Super IO Configuration ---- 54
Fig.6-29: H/W Monitor Configuration ---- 55
Fig.6-30: Serial Port Console Redirection Configuration ---- 56
Fig.6-31: 15 PCI Configuration ---- 57
Fig.6-32: Power Control Configuration ---- 58
Fig.6-33: Advanced Configuration ---- 59
Fig.6-34: Boot ---- 60
Fig.6-35: Security ---- 61
Fig.6-36: Save and Exit ---- 62
Fig.6-37: Touch calibration procedure ---- 63
Fig.6-38: Brightness Control procedure ---- 65
Fig.7-1: Front view of 10.4“Panel PC system ---- 70
Fig.7-2: Front view of 15“Panel PC system ---- 70
Fig.7-3: Front view of 17“Panel PC system ---- 71
Fig.7-4: Rear & Right-side view of 10.4” Panel PC System ---- 72
Fig.7-5: Rear & Right-side view of 15” Panel PC System ---- 72
Fig.7-6: Rear & Right-side view of 17” Panel PC System ---- 73
Fig.7-7: Wall mount kit Top & Side View ---- 73

List of Tables

Table 5-1: Electrical Specifications for the Panel System ---- 20
Table 5-2: Control indicators of the system ---- 21
Table 5-3: System status ---- 21
Table 5-4: HDD Working status ---- 22
Table 6-1: Cut-out Dimension by Panel size ---- 40

1. Introduction

This user manual is designed for American Industrial Systems, Inc. Panel PC series IP10IA99 / IP15IA99 / IP17IA99. Included is a comprehensive overview of the Panel CP systems designed by American Industrial Systems.

All rights reserved. None of this document shall be duplicated, stored in a retrieval system, or transmitted by all means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of American Industrial Systems, Inc. No copyright or patent liability is assumed with respect to the use of the information included herein. Although every precaution has been taken in the preparation of this documentation, neither responsibility is assumed for errors or omissions by the publisher and the author, nor is any liability assumed for damages caused by the use of the information included herein.

The information in this documentation is subject to change without prior notice and does not stand for a commitment on the part of American Industrial Systems, Inc.

The information included in this manual may be subject to technical changes especially owing to constant product upgrades.

The attached documentation does not involve any guarantee on the part of American Industrial Systems, Inc. regarding technical processes described in the manual or any product characteristics specified in the manual. American Industrial Systems, Inc. does not accept any liability for any printing errors or other inaccuracies in the manual unless it can be proven that American Industrial Systems, Inc. is aware of such errors or inaccuracies or that American Industrial Systems, Inc. overlooks these as a result of gross negligence and American Industrial Systems, Inc. has failed to get rid of these errors or inaccuracies for this reason.

American Industrial Systems, Inc. clearly inform the users that this manual only encloses a general description of technical processes and instructions which may not be applicable in every single case. In cases of doubt, please contact American Industrial Systems.

This manual is protected by copyright. All rights are reserved by American Industrial Systems, Inc. Copies of all or part of this manual or translations into different languages may only be made with the prior written consent American Industrial Systems, Inc. point out that the information included in this manual is constantly being updated in line with the technical changes and improvements made by American Industrial Systems, Inc. to the products and thus this manual only reflects the technical status of the products at the time of printing.

© 2012 by American Industrial Systems, Inc.

1.1 Symbols used in this manual

Symbol	Denotation
	This symbol designates the danger of injury to the user or the risk of damage to the product if the corresponding warning notices are not observed.
	This symbol designates that the product or parts which could be damaged if the corresponding warning notices are not observed.
	This symbol designates general information about the product and the user's guide.
	This symbol designates detail information about the specific product configuration.

2. Important Instructions

This chapter includes instructions which must be carefully followed when the Operator Interface Computer system, IP10IA99 / IP15IA99 / IP17IA99, is used. The manufacturer's instructions provide helpful information on your system.

2.1 Notes on the Warranty

Due to their limited service life, parts which, by their nature, are especially subject to wear down (wearing parts) are not included in the guarantee beyond the legal stipulations.

2.2 Exclusion of Accident Liability Obligation

American Industrial Systems, Inc. shall be exempted from the statutory accident liability obligation if users fail to abide by the safety instructions.

2.3 Liability Limitation / Exemption from the Warranty Obligation

In the event of damage to the PPC unit caused by failure to abide by the hints in this manual and on the unit (especially the safety instructions), American Industrial Systems, Inc. shall not be required to respect the warranty even during the warranty period and shall be free from the statutory accident liability obligation.

3. Safety Instructions

This section should be carefully read and please abide by the instructions for your own safety and right use of the unit.

The chapter also includes information on approval and interference inhibition of your unit. Please abide by the warnings and instructions on the unit and in the manual.

The Operator Interface Computer system, IP10IA99 / IP15IA99 / IP17IA99, Panel system was built and tested by American Industrial Systems, Inc. in accordance to and kept the company in a perfectly safe condition.

In order to retain this condition and make sure safe operation, the users must abide by the instructions and warnings

◎The unit must be used in accordance with the instructions of usage.

◎The electrical installations in the room must not violate the requirements of the local (country-specific) regulations.

◎Pay cautious attention that there are no cables, especially power cables, in areas where persons can go over them.

◎Only use the power cord supplied with the package. Don't use injured or damaged power cords.

Hints for DC power connection: The DC power source should be able to be switched off and on via an isolating switch. The unit is only completely disconnected from the DC main power source, when the DC power cord is disconnected either from the power source or the unit. Therefore, the DC power cord and its connectors must always remain within reach.

Hints for AC power connection via external AC/DC adapter: The main power cable of the optional external AC/DC adapter serves as disconnecting device. For this reason the outlet of the AC power source must be located near to the device and be easily reached.

◎Never place the unit under direct sunlight, near heat sources or in a humid place. Make sure the unit has proper ventilation.

◎Only units and components which meet the requirements of an SELV circuit (safety extra low voltage) in compliance with EN60950 can be connected to the interfaces of the system.

◎All plugs on the connection cables must be screwed or locked to the housing.

◎The Operator Interface Computer panel system, IP10IA99 / IP15IA99 / IP17IA99, designed to be used in upright position with the I/O interfaces downwards.

◎The unit generates heat under operation condition. Make sure it is properly ventilated. Never cover up the air intake and exhaust openings of the unit. Do not impede the fins of the heat sink.

◎Repairs may only be operated by specialists or technicians qualified and authorized by American Industrial Systems, Inc.

◎Maintenance or repair on the open unit may only be operated by specialists or technicians qualified and authorized by American Industrial Systems, Inc. who are familiar with the related hazards.

◎When accessing to internal components, users must switch off the unit and disconnect it from the power source.

◎Only original accessories (or suggested optional parts) approved and supplied by American Industrial Systems, Inc.

◎The DC-input must meet SELV requirements of EN60950-1 standard.

◎Assumption of safe operation no longer possible must be taken,

- if the unit has obvious damage or
- if the unit no more functions.

Under such cases that the unit must be shut down and secured against any unintended operation.

3.1 Electrostatic Discharge (ESD)

A sudden discharge of electrostatic electricity can damage electrostatic-sensitive devices or circuit. Adequate packaging and grounding techniques are essential fundamentals to avoid damage. Following precautions should be always taken:

1. Deliver printed circuit boards in electrostatic-safe containers such as cartons, boxes or anti-static bags.
2. Keep electrostatic-sensitive parts in their containers until they reach an electrostatic-free station.
3. Follow adequate grounding when a sensitive PCB, components, or assemblies are touched.
4. Store electrostatic-sensitive PCB's in a protective packaging or on conductive foam.

3.2 Grounding Methods

Protect against electrostatic damage of the unit by taking the following preventative measures:

1. Cover workstations with approved anti-electrostatic material. Provide a wrist strap connected to a working bench and properly grounded tools and equipment.
2. For extra protection by using anti-electrostatic mats, heel straps, or air ionizers.
3. Handle electrostatic-sensitive components, PCB's, and assemblies with care nearby the case or the edge of the board.
4. Prevent contact with pins, leads, or circuitry.
5. Switch off power and input signals before plugging and removing connectors or test equipment.
6. Keep the work area free from non-conductive materials such as ordinary plastic assembly aids and Styrofoam.
7. Use field service tools with conductivity, such as screwdrivers, pliers, and vacuum cleaners.
8. Always put drives and PCBs with the component-side down on the working bench.

3.3 Instructions for the Lithium Battery

Warning

Danger of explosion when wrong type of battery is replaced. Replacement only with the same type or equivalent type recommended by the manufacturer.

Do not throw away used CMOS batteries to domestic waste. Throw away the battery according to the local regulations dealing with the disposal of these special materials (e. g. to the collecting points for disposal of batteries).

3.4 FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection from harmful interference when the equipment is operated in commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in residential area is likely to cause harmful interference in which case the users will be required to correct the interference at his own expense.

3.5 Electromagnetic Compatibility

The Operator Interface Computer panel system, IP10IA99/IP15IA99/IP17IA99, has been designed for industrial use. The most recent version of the EMC guidelines (EMC Directive 2004/108/EC) is applied. If the users modify and/or add to the equipment (e.g. installation of add-on cards), the prerequisites for the CE conformity declaration (safety requirements) may be not applicable any more.

4. Goods of Delivery

<table>
<tr><td> </td><td>Panel 10.4” IP10IA99-A1
Panel 15” IP15IA99-A1
Panel 17” IP17IA99-A1

IP10IA99 / IP15IA99 / IP17IA99 Panel PC series</td></tr>
<tr><td> </td><td>Panel Mount Kit
Panel 10.4” IP10IA99-A1 8 pieces
Panel 15” IP15IA99-A1 16 pieces
Panel 17” IP17IA99-A1 16 pieces</td></tr>
<tr><td> </td><td>Open Lead DC Power Cable</td></tr>
<tr><td> </td><td>Power Cord (US & EU)

 </td><td>AC/DC Adapter (24V/75W) with Power Cord (compliant with EU/US requirement)

Optional Wall-mount bracket or Support bracket (for DIN Rail Clip) of the AC/DC Adapter</td></tr>
</table>

		Optional AC/DC Adapter Housing for Wall-mount or DIN Rail Mount.
		1x DIN Rail Clip (Optional) for standard 35mm DIN Rail

4.1. Label and Product Identification

The label is placed at the rear side of the unit, IP10IA99 / IP15IA99 / IP17IA99 Panel PC series. These model & part numbers correspond to the model & part numbers for certification tested by UL, and other certifying agencies. On the label of the system, the "bracket" [ ] is replaced by alphanumeric characters combination according to the configuration of ordered systems.

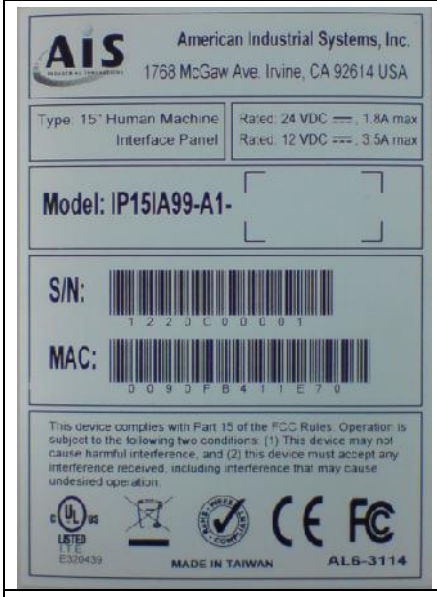

AIS
American Industrial Systems, Inc.
1768 McGaw Ave. Irvine, CA 92614 USA
Type: 15" Human Machine Interface Panel
Rated: 24 VDC ⎓, 1.8A max
Rated: 12 VDC ⎓, 3.5A max
Model: IP15IA99-A1-
S/N:
MAC:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
MADE IN TAIWAN
AL6-3114

Fig.4-1: Label on the unit

5. Product Description

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is a Human-Machine-Interface (HMI) system with integrated a 5-wire Resistive Touch Screen designed for harsh industrial applications.

The ruggedness design with a brilliant mechanical firmness indicates the top qualities of a Panel PC suitable for the operation in strict industrial environment.

Before you begin using your Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, you should take a few minutes to learn about the various ports, bays, connectors and indicators that are part of your Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, as well as the components that compose your system.

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, has many special features：

(1) Lower Power ATOM 1.66GHz N455 Processor and Fan-free System.
(2) In front of the touch panel, a complete overlay (DIN42115-2) with anti-reflection is attached.
(3) The complete overlay in front of touch panel and bezel (stainless steel or aluminum) protects the display from dust, water and accidental contact.
(4) 5-pin terminal block connector for power inlet from the adaptor to the unit. 3-pin is the power (V+ / NC / V-) supplied from a wide input range DC +12V ~ +24V (± 20% tolerance); while the other 2-pin serves the UPS-like purpose. If the AC power source is failed and no power inputs to the DC adaptor, the other 2-pin on the right side of the connector can supply the power to the unit from the standby UPS.
(5) The I/O is a flexible design, main combination with 2x RS-232/422/485 ports (COM1, 2), 1x VGA port, 2x USB 1.1/2.0 ports, 2x Gigabit Ethernet ports. In addition, users may select expandable I/O combination of RS-232 port (COM3), 2x USB 1.1/2.0 ports for different application demands.
(6) Indicators of 1x Power LED (front side), 1x HDD LED and 2nd Power LED (rear side) are designed.
(7) "Power On after AC Power Loss" - when the power is supplied again, it will start Auto Power On (default setting in BIOS).
(8) HDD and CF card are easily accessible for installation and maintenance.
(9) Brightness of Panel PC is adjustable by users through application software (API) of the OS system.
(10) The selectable RS-232/422/485 function can be set through BIOS.

When powering on the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, please make sure that the air intake and exhaust openings are not blocked.

Features of ease-of-use, slim-type, fan-free, noise-less and low power consumption should be emphasized as well.

Fig.5-1:Top view of the IP15IA99 Panel PC System (15")

Fig.5-2: Right view

Fig.5-3：Front view of the IP15IA99 Panel PC System (15")

Fig.5-4: Left view

Fig.5-5: Bottom view of the IP15IA99 Panel PC System (15")

Fig.5-6: Rear view of the IP15IA99 Panel PC System (15")

‘

Fig.5-7: Top view of the IP10IA99 Panel PC System (10”)

Fig.5-8: Right view

Fig.5-9：Front view of the IP10IA99 Panel PC System (10”)

Fig.5-10: Left view

Fig.5-11: Bottom view of the IP10IA99 Panel PC System (10”)

Fig.5-12: Rear view of the IP10IA99 Panel PC System (10”)

5.1 Front Side View

Fig.5-13：Front view of the IP15IA99 Panel PC System (15")

1	Complete overlay on the front bezel of Stainless Steel or Aluminum	4	Power Button
2	Logo (optional)	5	LED as Power indicator
3	10.4"/15"/17" TFT-LCD display with 5-Wire Touch Screen		

All versions are suitable for installation in an instrument panel or other cabinet. On the front side are located:

◎ Front Bezel (Stainless Steel or Aluminum front bezel with customized complete overlay of PET) for the 10.4"/15"/17" display.

◎ Display (10.4"/15"/17") with corresponding 5-Wire Resistive Touch Screen.

◎ Power Button and LED as Power Indicator

Depending on the size of the integrated display (10.4"/15"/17"), the outline dimensions of display unit are:

Dimension [mm]	10.4" Display IP10IA99	15" Display IP15IA99	17" Display IP17IA99
Front Bezel of Stainless Steel (W x H)	314 x 253	425.4 x 330	437 x 375
Front Bezel of Aluminum (W x H)	314 x 253	425.4 x 330	437 x 375
Front cut-out for display (W x H)	213.58 x 160.75	305.5 x 229.5	338.2 x 269.7
Rear side enclosure (W x H x D)	294 x 234 x 50	406.4 x 311 x 53.4	418 x 356 x 58.4

5.1.1 10.4"/15"/17" Display with Touch Screen

Depending on the ordered Operator Interface Computer 10"/15"/17" NEMA4 panel system, IP10IA99 / IP15IA99 / IP17IA99, the built-in display is a 10.4" or 15" or 17" display. For technical specification of the built-in display, please refer to the section of "Technical Data" in this manual.

The display is designed with a 5-Wire Resistive Touch Screen. The surface of the display is also mechanically protected through the touch screen. The touch screen (USB interface) registers contacts of a finger or a pen and allows moving the mouse pointer. Use a stylus for best results. It functions only under integration of the necessary software. Users get the corresponding touch screen driver for their operating system, installed on the Operator Interface Computer 10"/15"/17" NEMA4 panel system, IP10IA99 / IP15IA99 / IP17IA99 Panel system.

Do not use a hard or a pointed object (like screw drivers or pliers) to operate the touch screen, because such an action will damage the surface of touch screen.

5.1.2 Front Panel Care and Cleaning (Chemical Resistance)

Mild detergent and water, or isopropyl alcohol is recommended for cleaning. Use of solvents with strong acidity or alkalinity, which could react with the paint or printed color or plastic, should be avoided.

The overlay or the touch screen surface is subject to burning and scaring from direct heat sources such as lighters or cigarettes. The front display is sealed against water and dust.

The front surface of the touch screen is a flexible plastic membrane, so care should be taken to avoid using sharp objects such as blade of knife, pen or pencil tips. Sharp objects can permanently damage the functionality of the touch screen.

The unit without a touch screen has a polycarbonate shield which might be scratched by an object sharp enough. For detailed information, please refer to the following content.

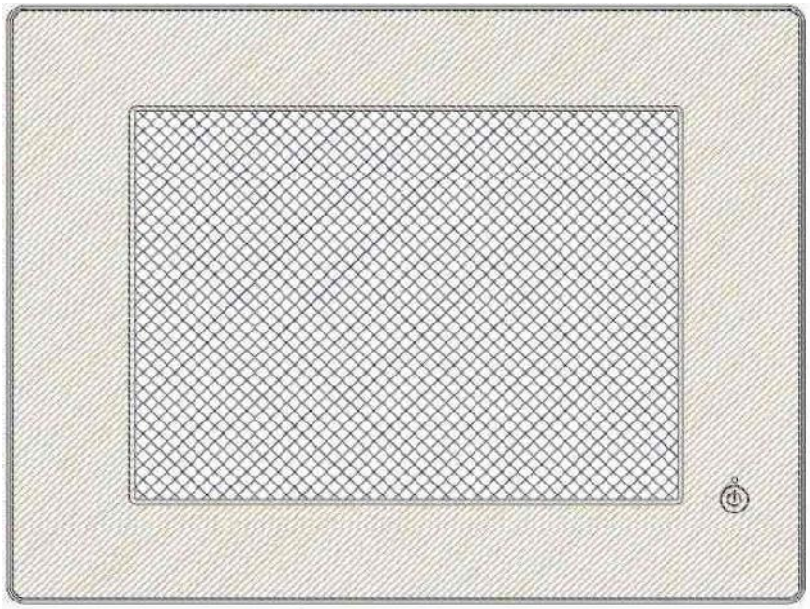


Fig.5-14 : Chemical resistance for the area of textured paint

Chemical Properties		
·GOOD Resistance	Resistant to: Alcohol Diluted acids Diluted alkalis Ester Hydrocarbon Ketones Household cleaning reagents	surfaces withstand exposure of more than 24 hours duration under DIN 42 115 Part 2 to the mentioned chemicals without visible change

NOTES:

Please remember that information and measurements mentioned above come from general known data. These tests were done under the laboratory conditions, and don't represent an actual operation conditions. The relatively short Lab test doesn't mean to meet all influences (e.g. possible additives or dirtiness) which can exist at long-term service. Before using the front bezel, it is necessary to remember all conditions of each application and all possible impacts to materials of front bezel. e.g. an injurious effect of some aggressive substances can be advanced by higher temperatures. Also a permanent deformation or mechanical erosion of surfaces can reduce a chemical resistance of used materials.

5.2. Bottom View

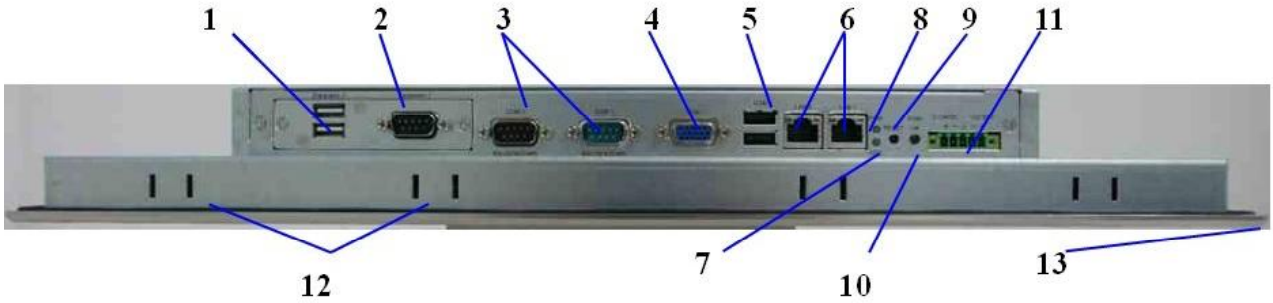


Fig.5-15 : I/O View

1	2 x USB 1.1/2.0 ports (Default) or 1x RS-232 port for Additional (Extension)	8	1 x Power LED
2	1 x RS-232 port (COM3) (Default) or 2x USB 1.1/2.0 ports for Additional (Extension)	9	1x System Power Switch
3	2 x RS-232/422/485 ports (COM1, 2)	10	1 x Reset Switch
4	1x VGA port	11	1x 5-pin Terminal block connector
5	2x USB 1.1/2.0 ports	12	Panel mount holes
6	2x Gigabit Ethernet ports	13	Front panel of the system with seal at the rear side
7	1 x HDD LED		

5.3. Power, Control Indicators, Reset and Grounding

5.3.1 Power Connector

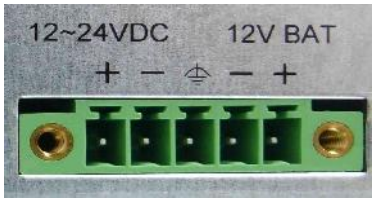


Fig.5-16: DC Power connector on the bottom (rear) side of the OIC Panel system

The DC Power connector (refer to Fig.5-15, #11 and Fig.5-16) provides the power connection of the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99 to the main power source via the DC power cable or the AC/DC adapter.

5-pin terminal block connector for power inlet from the adaptor to the unit. 3-pin is the power (V+ / NC / V-) supplied from a wide input range DC +12V ~ +24V (± 20% tolerance); while the other 2-pin serves the UPS-like purpose. If the AC power source is failed and no power inputs to the DC adaptor, the other 2-pin on the right side of the connector can supply the power to the unit from the standby UPS.

Table 5-1: Electrical Specifications for the Panel System

System Type	Product	Input
Operator Interface Computer 10"/15"/17" NEMA4 system	IP10IA99	24V DC 1.49A max. 12V DC 2.93A max.
	IP15IA99	24V DC 1.73A max. 12V DC 3.46A max.
	IP17IA99	24V DC 2.18A max. 12V DC 4.16A max.

5.3.1.1 Power Button and Power LED

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, provides a power button (refer to #4, Fig.5-13) and a power LED (refer to #5, Fig.5-13) on the front panel.

The power button allows to Power ON/OFF Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, depending on the settings for the power button in BIOS Setup (default setting is Power/After Power Failure/ON).

The power LEDs show the ON/OFF state of the system. The OIC (Operator Interface Computer) 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99 is equipped with a power LED on the front panel (refer to Fig.5-17). An additional power LED (PWR) is available on bottom (rear) side of the system (refer Fig.5-18).

Table 5-2: Control indicators of the system

	OIC (Operator Interface Computer) 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99
Power Button (on the front panel)	available
Power LED (on the front panel)	available
Power LED (on the rear bottom side)	available

Table 5-3: System status

The system is connected to a DC power source	Power Button (front)	Power LED (front)	Power LED (rear bottom)	Status of Panel System, IP10IA99 / IP15IA99 / IP17IA99
10"/15"/17"	Off	orange (standby)	orange (standby)	The system is in standby.
	On	green	green	The system is running.

Fig.5-17-1: Close-up on front panel of 10"/15"/17", Power button and LED as power indicator on the lower right front side of the unit.

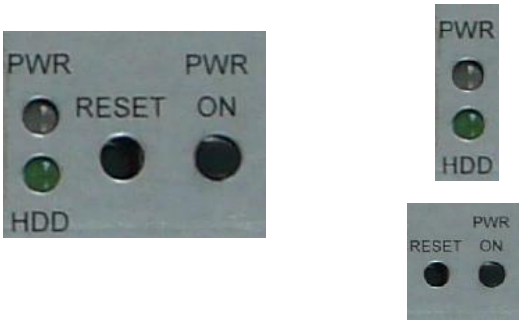


Fig.5-17-2: Close-up on I/O of 10"/15"/17", Power LED and Reset button on the bottom (rear side) of the unit.

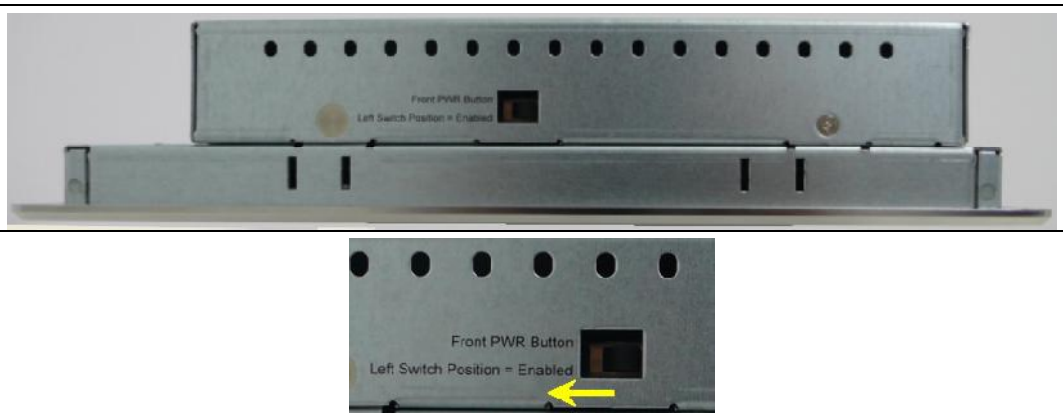


Fig.5-18 Adjust the switch to the left position to enable the PWR button on the front bezel. It's a protective mechanism.

Hints for DC power connection:

The DC power source should be able to be switched off and on via an isolating switch.

The unit is only completely disconnected from the DC main power source, when the DC power cord is disconnected either from the power source or the unit. Therefore, the DC power cord and its connectors must always remain easily accessible.

Hints for AC power connection via the optional external AC/DC adapter (not included):

The main power cable of the external AC/DC adapter serves as disconnecting device. For this reason the

outlet of the AC power source must be located near to the device and be easily accessible.

5.3.1.2 Reset Button

To restart the system, e.g. after a system hang-up, press the “RESET” button (Fig.15-18). The system restarts automatically; you don’t have to switch the computer off and on. During a reset all data in the main memory will be erased.

5.3.1.3 HDD LED

The HDD LEDs show the ON/OFF state of the system. The Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is designed with a HDD LED on the bottom (rear) side of the system (Fig.5-18).

Table 5-4: HDD Working status

HDD Work 10.4" and 15" PPC	HDD LED (rear)
Off	N/A
On	Green

5.3.2 Interfaces (Rear, Bottom Side of the System)

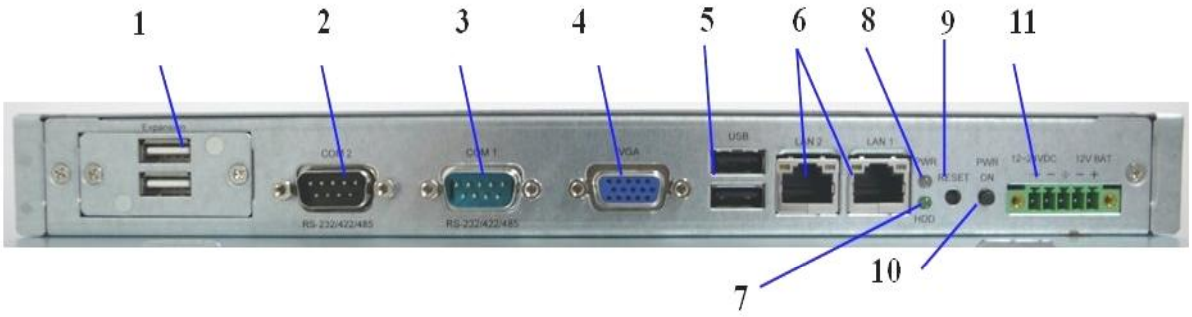


Fig.5-19: I/O interface

1	2 x USB 1.1/2.0 ports (Default) or 1x RS-232 port for Additional (Extension)	7	1 x HDD LED
2	1 x RS-232 port (COM3) (Default) or 2x USB 1.1/2.0 ports for Additional (Extension)	8	1 x Power LED
3	2 x RS-232/422/485 ports (COM1, 2)	9	1x System Power Switch
4	1x VGA port	10	1 x Reset Switch
5	2x USB 1.1/2.0 ports	11	1x 5-pin Terminal block connector
6	2x Gigabit Ethernet ports		

Fig.5-20：Expansion I/O on 15’/ 17”

Fig.5-21：Expansion I/O on 10.4”

5.3.2.1 USB Connectors

The system is equipped at the bottom side (rear) with two USB 1.1/2.0 interface connectors and_two USB1.1/2.0 for additional Extension (#1 and #5, Fig.5-19). These connectors provide connections for USB-compatible devices.

5.3.2.2 COM port Serial Interface Connector

This RS232/RS422/RS485 connection (marked as COM1, COM2) (#2 and #3, Fig.5-19) are available, and RS232 connection (marked as COM3, COM4) for extensional selection as 2*5 Pin Box Header/2mm Right Angle connectors (female) and provides connection RS232 for serial devices.

5.3.2.3 LAN1 and LAN2 Ethernet Interface Connectors

These interface connectors (#6, Fig.5-19) are provided as RJ45 sockets with integrated LEDs.

Ethernet Port	Data Transfer Rate
LAN1	10/100/1000 Mbps
LAN2	10/100/1000 Mbps

Ethernet LED States: Left LED State	Link Activity State	Right LED State	Link Speed
Off	No Active	Off	10 Base-T
Yellow	Active	Green	100 Base-T
		Orange	1000 Base-T

5.3.2.4 VGA Interface Connector

An external (analog) monitor can be plugged into this interface (#4, Fig. 5-19) which is provided as a 15-pin D-SUB socket.

5.4 Top View

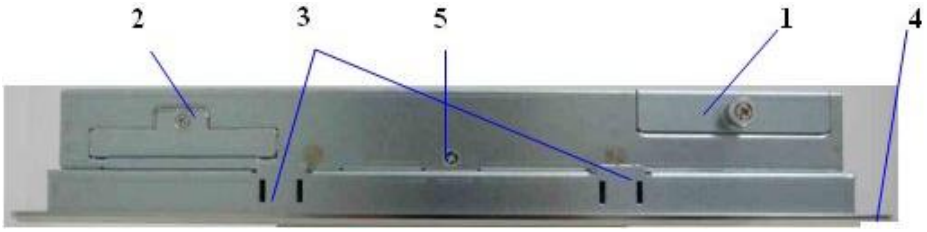


Fig.5-22: Rear side of the system (shown as 10.4" IP10IA99)

1 HDD slot (SATA)
2 Cover the obstructs the access to the CF-slot
3 Panel Mounting Slots with installed mounting clamp and screw
4 Front panel with seal on the rear side
5 Screws that secure the cover on the top side

When powering on the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, make sure that the air intake and exhaust openings are not obstructed.

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is configured with an internal 2.5" SATA HDD inside an easily removable bracket and also configurable with CF-slot protected with a cover (refer to #2, Fig.5-22) in order to prevent it from intrusion access.

5.5 Left and Right Side View

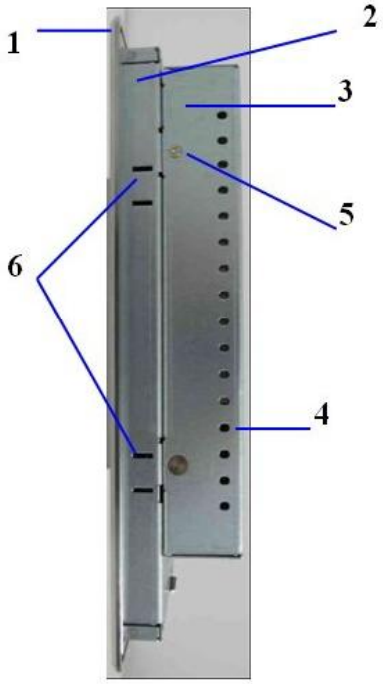


Fig.5-23: Right side of the 10.4" IP10IA99

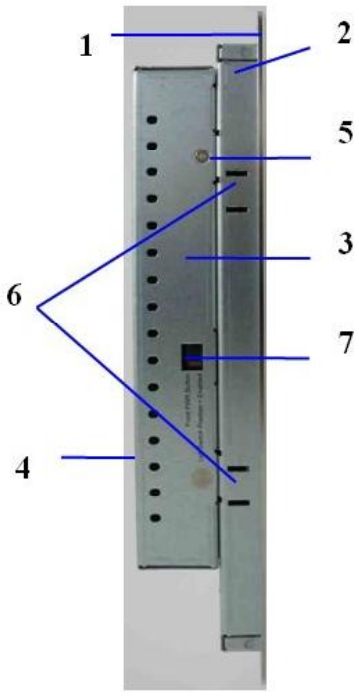


Fig.5-24: Left side of the 10.4" IP10IA99

Legend for Fig.5-23 and Fig.5-24:

1	Front panel of the system with seal at the rear side	5	Screws that secure the cover on the left and right side
2	Enclosure of the display	6	Mounting slots with installed mounting clamp and Allen Screw
3	Cover	7	Power On/off switch (Enabled/ Disabled)
4	Operation System (OS) license sticker, type label of the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, with C-UL Listing Mark and Label		

5.6 Rear View

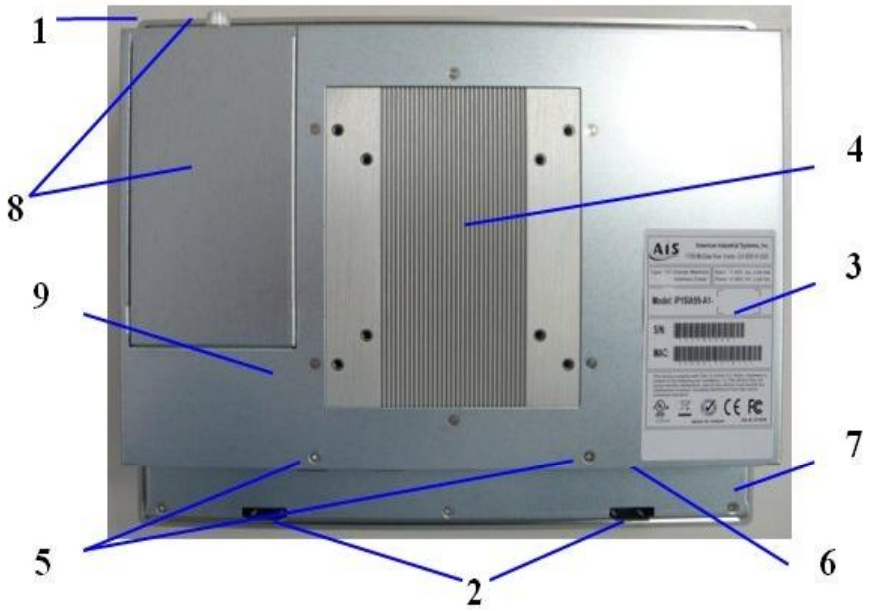


Fig.5-25: Rear side of the system (shown as 10.4” IP10IA99)

1	Front panel of the system with seal at the rear side	5	Screws that secure the cover on the rear side
2	Mounting clamp and Allen Screw for mounting to a sub-frame	6	Interface side
3	Label of IPxxIA99 product designation	7	Enclosure of the display
4	Threaded hole [marked red in the picture only (4x for mounting the VESA® 75/100 compliant, adapter plate); refer to the “VESA® Mounting Plate (Optional)”]	8	Cover that obstructs the access to the CF-slot
		9	Cover

5.7 DC or AC Power Connection

The Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, can be connected to a DC power source via a DC power cable (included) and optionally to an AC power source via an AC/DC adapter (not included).

5.7.1 DC power cable

The external AC/DC power adapter is an optional part. If ordered, the AC/DC power adapter will be delivered with two main power cords.

Open Lead Cable (2m)

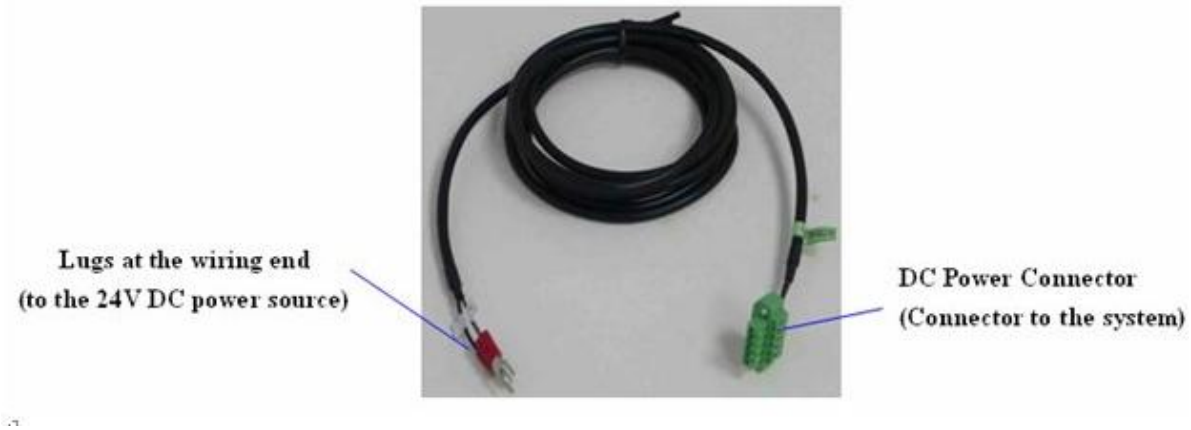


Fig.5-26: External Open Lead Cable supplied with the IPxxIA99 Panel system

5.7.2 External AC/DC Adapter

The external AC/DC power adapter is an optional part. If ordered, the AC/DC power adapter will be delivered with two main power cords.

Fig.5-27: External AC/DC 24V/75W adapter supplied with the IPxxIA99 Panel system

Electrical Specifications for the AC/DC Adapter

AC Input	DC Output
100-240V 1.2A 50-60Hz	24V DC 3.125A

For connecting to the system and power refer to “Connecting to Power”.

Electrical Specifications for the Panel System

System Type	Product	Input
Operator Interface Computer 10"/15"/17” NEMA4 system	IP10IA99	24V DC 1.49A max. 12V DC 2.93A max.
	IP15IA99	24V DC 1.73A max. 12V DC 3.46A max.
	IP17IA99	24V DC 2.18A max. 12V DC 4.16A max.

5.8. Accessing Internal Components

This section contains important information that you must read before accessing the internal components. You must follow these procedures properly when handling any board components of the system.

Before removing the cover of the Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, in order to gain access to the internal components, the system must be powered-down and the power cord has to be disconnected from the power source.

The system may only be opened in accordance with the description in this user’s manual for: ▪

Configuration of the RS422 / RS485 interface. (Refer to COM port mode by BIOS setting)

These procedures have to be carried-out only by qualified specialist personnel.

It is not allowed to operate the system without installed cover.

Please observe the safety instruction for handling assemblies with static sensitive device. Failure to take heed of this warning instruction can result in damage to the device.

6. System Installation

The Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is delivered with pre-installed operating system. According to the ordered system configuration all drivers are installed. The system is fully operational at the first start-up.

6.1 H/W Installation

6.1.1 Jumping Setting

You may configure the Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, to match the needs of your application by setting Jumpers on Main board. To select any option, cover the jumper cap over (SHORT) or remove (NC) it from the jumper pins according to the following instructions. Here NC stands for “Not Connect”.

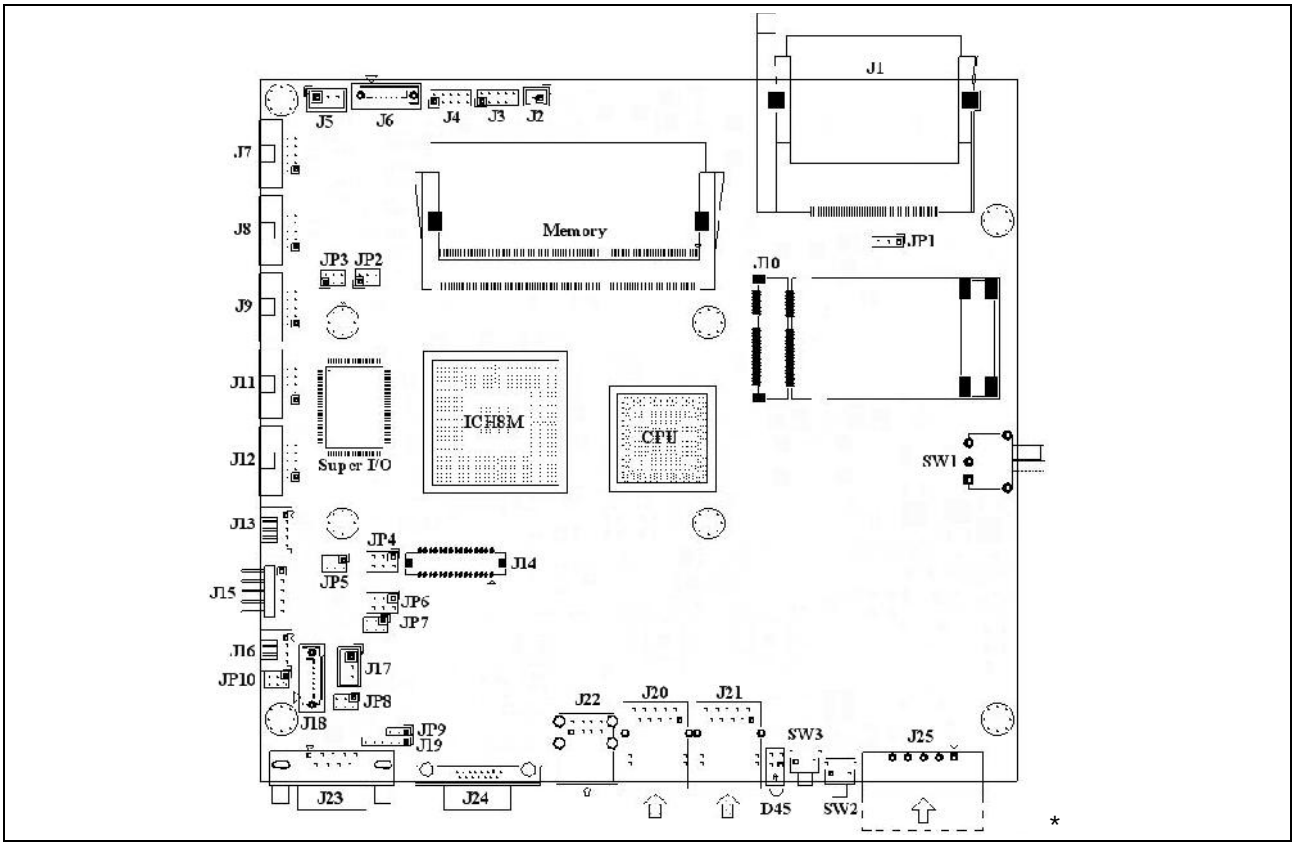


Fig.6-1: Top-side Jumper and Connector Locations

Connector	Description	Remark
Jumper Setting		
JP1	CMOS Setup	
JP2/J3	COM3 Pin 9 Function Setup	
JP4	LCD Panel Voltage Setup	
JP5	COM2 Pin 9 Function Setup	
JP6	LCD Panel Inverter ON/OFF Signal Setup	
Connector		
J1	Compact Flash Type II Connector	
J2	Case Open Detect Connector (1*2 Pin wafer/2mm)	
J3	LPC Debug Card Connector (2*5Pin cut Pin 9 Header /2.54mm)	
J4	GPIO Connector (2*5 Pin Header/2mm)	
J5	Power output Connector for SATA device (1*3 Pin wafer/2.5mm Right Angle)	
J6	SATA Port 1 Connector (Single Right Angle)	
J7	USB Port 2~3 Connector (2*5 Pin Box Header/2mm Right Angle)	
J8	USB Port 4~5 Connector (2*5 Pin Box Header/2mm Right Angle)	
J9	COM3 (RS-232) Connector (2*5 Pin Box Header/2mm Right Angle)	
J10	Mini-PCIe Connector	
J11	COM4 (RS-232) Connector (2*5 Pin Box Header/2mm Right Angle)	

J12	COM2 (RS-232/422/485) Connector (2*5 Pin Box Header/2mm Right Angle)	
J13	LCD Backlight Power Connector (1*5 Pin wafer/2mm)	
J14	LCD LVDS Connector (2*15 Pin Hirose/1.25mm)	
J15	Touch Panel Connector (1*5 Pin Header/2.54mm)	
J16	Front Panel Connector (1*4 Pin Wafer/2mm)	
J17	Power output Connector for SATA device (1*3 Pin wafer/2.5mm Right Angle)	
J18	SATA Port 0 Connector (Single Right Angle)	
J19	XC3S200A JTAG Connector (1*6 Pin Header/2mm)	
J20	LAN1 RJ-45 Connector	
J21	LAN2 RJ-45 Connector	
J22	USB Port 0~1 Connector (Type A)	
J23	COM1 (RS-232/422/485) Connector (D-SUB9)	
J24	VGA Connector (D-SUB 15 Pin female)	
J25	Power Input Connector (Terminal Blocks 5Px1/3.81mm female)	
SW1	Front Panel Power on Switch ON/OFF slide	
SW2	Power on Switch (Push Button)	
SW3	H/W System Reset Switch (Push Button)	
D45	Status Display LED (1x2 LED Array)	

JP1: CMOS Setup

PIN NO.	DESCRIPTION
1-2	Normal (Keep CMOS Setup)
2-3	Clear CMOS Setup

JP2/ JP4/JP5/ JP8: COM3/COM4/COM2/ COM1 Pin 9 Function Setup

PIN NO.			DESCRIPTION
1-2	3-4	5-6	
Short	NC	NC	+5V Output
NC	Short	NC	RI Function (Default)
NC	NC	Short	+12V Output

JP4: LCD Panel Voltage Setup

PIN NO.			DESCRIPTION
1-3	3-5	3-4	Voltage
Short	NC	NC	+3.3V TFT LCD (Default)
NC	Short	NC	+5V TFT LCD
NC	NC	Short	+12V TFT LCD

JP6: LCD Panel Inverter ON/OFF Signal Setup

PIN NO.		DESCRIPTION
1-3	2-4	
Short	Short	+5V High Active (Default)
PIN NO.		DESCRIPTION
1-3	4-6	
Short	Short	+12V High Active
PIN NO.		DESCRIPTION
2-4	3-5	
Short	Short	+5V Low Active
PIN NO.		DESCRIPTION
3-5	4-6	
Short	Short	+12V Low Active

JP7 & JP9: LCD Panel Type Setup

JP7			JP9		DESCRIPTION
(1-2)	(3-4)	(5-6)	(1-2)	(2-3)	LVDS Signal
Open	Open	Short	Open	Short	1CH 18 Bits
Open	Short	Open	Short	Open	1CH 24 Bits (Default)
Open	Open	Open	Short	Open	2CH 24 Bits

JP10: LCD Backlight Dimming Setup

PIN NO.				DESCRIPTION
1-3	2-4	3-5	4-6	
Short	NC	NC	NC	MAX +3.3V (Software adj.)
NC	Short	NC	NC	MAX +3.5V
NC	NC	Short	NC	MAX +5V (Software adj.)
NC	NC	NC	Short	MIN 2.3V

6.1.2 Connector

J1: Compact Flash Type II Connector

J2: Case Open Detect Connector (1*2 Pin wafer/2mm)

PIN NO.	DESCRIPTION
1	Case Open sensor
2	GND

J3: LPC Debug Card Connector (2*5Pin cut Pin 9 Header /2.54mm)

J4: GPIO Connector (2*5 Pin Header/2mm)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GPIO Port1	2	GPIO Port5
3	GPIO Port2	4	GPIO Port6
5	GPIO Port3	6	GPIO Port7
7	GPIO Port4	8	GPIO Port8
9	GND	10	+5V

J5/J17: Power output Connector for SATA device (1*3 Pin wafer/2.5mm Right Angle)

PIN NO.	DESCRIPTION
1	+ 12V
2	GND
3	+ 5V

J6/J18: SATA Port 1 Connector (Single Right Angle)

J7/J8: USB Port 2~3 /Port 4~5 Connector (2*5 Pin Box Header/2mm Right Angle)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+ 5V (Port 2)	2	+ 5V (Port 3)
3	USB_D2-	4	USB_D3-
5	USB_D2+	6	USB_D3+
7	GND	8	GND
9	NC	10	NC

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+ 5V (Port 4)	2	+ 5V (Port 5)
3	USB_D4-	4	USB_D5-
5	USB_D4+	6	USB_D5+
7	GND	8	GND
9	NC	10	NC

J9: COM2/COM3/COM4 Connector (2*5 Pin Box Header/2mm Right Angle)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD 2/3/4	2	RXD 2/3/4
3	TXD 2/3/4	4	DTR 2/3/4
5	GND	6	DSR 2/3/4
7	RTS 2/3/4	8	CTS 2/3/4
9	RI 2/3/4	10	NC

J10: Mini-PCIe Connector

J13: LCD Backlight Power Connector (1*5 Pin wafer/2mm)

PIN NO.	Description
1	LCD_ENBLT
2	GND
3	+12V
4	LCD_BLADJ
5	+5V

J14: LCD LVDS Connector (2*15 Pin Hirose/1.25mm)

PIN NO.	Description	PIN NO.	Description
1	YAP0	2	YAM0
3	YAP1	4	YAM1
5	YAP2	6	YAM2
7	YAP3	8	YAM3
9	CLKAP	10	CLKAM
11	YBP0	12	YBM0
13	YBP1	14	YBM1
15	YBP2	16	YBM2
17	YBP3	18	YBM3
19	CLKBP	20	CLKBM
21	DDCPCLK	22	DDCPDATA
23	GND	24	NC
25	GND	26	GND
27	+LVDS	28	+LVDS
29	NC	30	+LVDS

J15: Touch Panel Connector (1*6 Pin Header/2.54mm)

PIN NO.	DESCRIPTION
1	UL
2	UR
3	Probe
4	LL
5	LR

J16: Front Panel Connector (1*4 Pin Wafer/2mm)

PIN NO.	DESCRIPTION
1	LED (Hi: Green LED +; Low: Orange LED -)
2	LED (Hi: Orange LED+; Low: Green LED-)
3	Power Button
4	Power Button

J19: XC3S200A JTAG Connector (1*6 Pin Header/2mm)

PIN NO.	DESCRIPTION
1	+3.3V
2	GND
3	TCK
4	TDO
5	TDI
6	TMS

J20: LAN1 RJ-45 Connector
J21: LAN2 RJ-45 Connector
J22: USB Port 0~1 Connector (Type A)
J23: COM1 (RS-232/422/485) Connector (D-SUB9)
J24: VGA Connector (D-SUB 15 Pin female)
J25: Power Input Connector (Terminal Blocks 5Px1/3.81mm female)

PIN NO.	DESCRIPTION
1	Backup Vin +
2	Backup Vin -
3	GND EARTH
4	Vin-
5	Vin+

SW1: Front Panel Power on Switch ON/OFF slide
SW2: Power on Switch (Push Button)
SW3: H/W System Reset Switch (Push Button)
D45: Status Display LED (1x2 LED Array)

Place	DESCRIPTION
Up	IDE Active LED (RED)
Low	Power LED (Power on: Green) (Power input: Orange)

6.1.3 Insert Memory module

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is fully integrated at system assembly line before shipment. It's not necessary for end users to do any assembly unless installing the optional HDD, RAM, CF and Power Input. Installation of these optional components is described below.

1. Unscrew the IPC back cover to detach it	2. Remove the IPC back cover
3. Insert Memory module to the slot.	4. Press down the Memory module and finish.

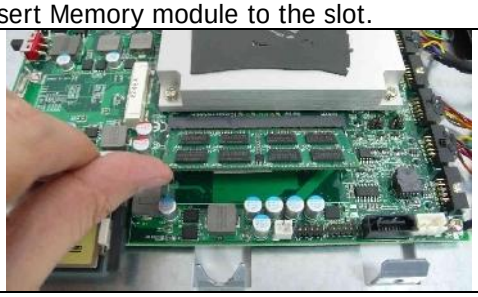
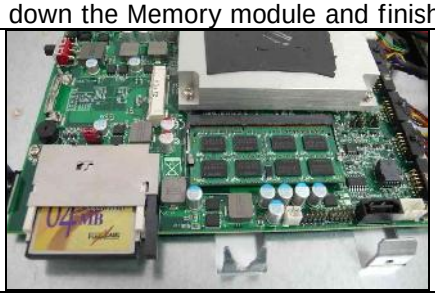
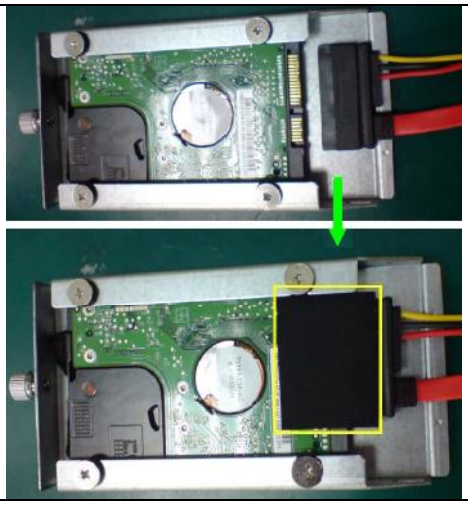
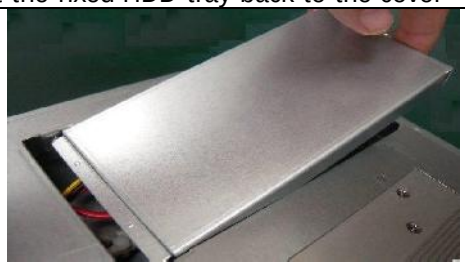

	

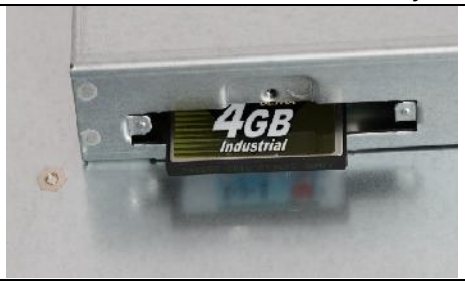
Figure 6-2: Installation of Memory	

6.1.4 Serial ATA Hard Disk Installation Method

Unlike IDE bus, each Serial ATA (SATA) channel can only connect to one SATA hard disk at a time; there are total two connectors, J6 and J18. The installation of Serial ATA is simpler and easier than IDE, because SATA hard disk doesn't require setting up Master and Slave, which can reduce mistake of hardware installation. The step 1 to 6 is HDD installation, and step 6 to 1 is HDD un-installation.

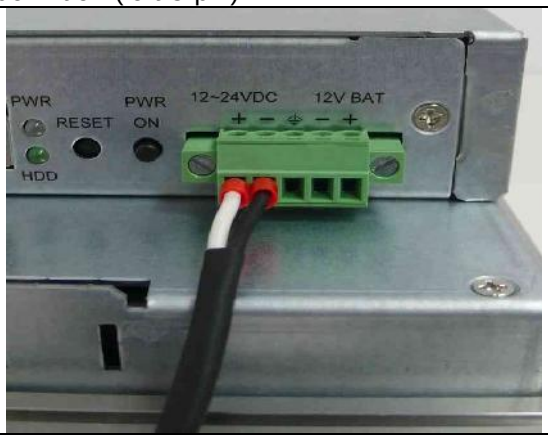
<table>
<tr><td>1. The removable HDD tray on the upper left side.</td><td>2. Fix the anti-vibration washers on HDD tray first</td></tr>
<tr><td> </td><td> </td></tr>
<tr><td>3. Fix the HDD to the removable tray with screws</td><td>4. Connect the HDD SATA cable & power cable and apply sticker cloth as illustrated.</td></tr>
<tr><td> </td><td>  </td></tr>
<tr><td>5. Put the fixed HDD tray back to the cover</td><td>6. Screw the HDD tray and finish.</td></tr>
<tr><td>  </td><td>
 </td></tr>
<tr><td colspan="2">⚠
Unscrewing the removable HDD tray shouldn't be operated unless the unit is turned off and the tray is not hot.</td></tr>
<tr><td colspan="2">Fig.6-3 : The procedure of HDD installation</td></tr>
</table>

6.1.5 CF Card Installation

1. Unscrew the side bracket of back cover	2. Remove the side bracket
3. Insert New CF card to CF socket carefully	4. Insert New CF card to CF socket carefully
	
5. Complete insertion (Ejection by pressing the elastic stick on the right side, if necessary.)	6. Screw the side bracket and finish.
Fig.6-4 : Side View of CF Card Insertion	

6.1.6 DC Power Input Installation

6.1.6.1 AC/DC Power adaptor installation

1. Female type 5-pin terminal block connector.	2. Insert and fix the connector according to power definition (left 3-pin)
	
Fig.6-5 : Power adaptor installation	

6.2 Panel and External AC/DC Adapter Mounting

6.2.1 Panel Mounting

All Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, configurations come in the delivering status with mounted mounting clamps (Fig.6-10, depending on the ordered system). These mounting clamps have to be removed at first in order to install the system into a sub-frame or a panel. Loosen the screws enough to allow the removing of the mounting clamps from the enclosure (but do not entirely remove the screws from clamps).
First of all, check the wall thickness and the cut-out dimension, then insert the mounting kit step by step as the following illustration.

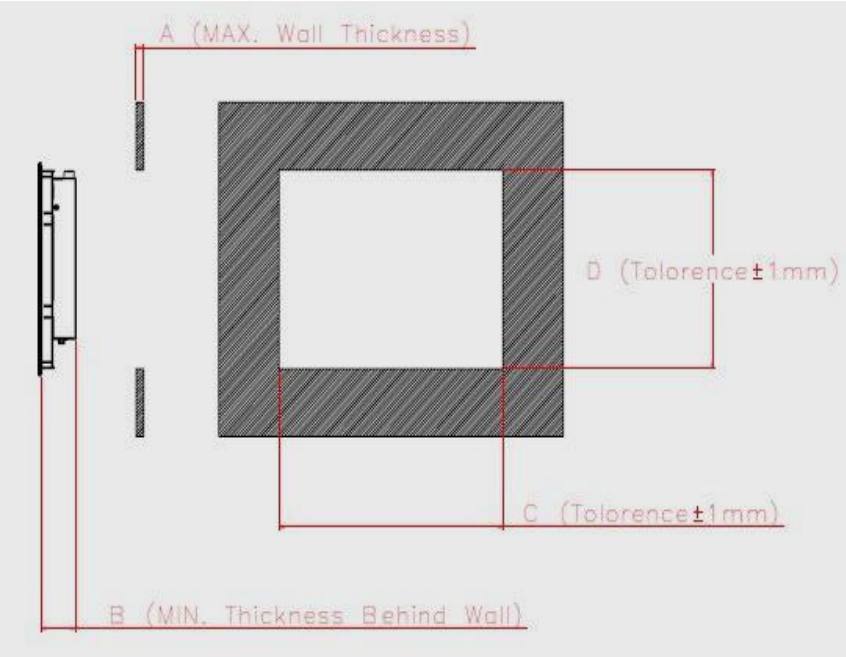


Fig.6-6: Cut-out definition

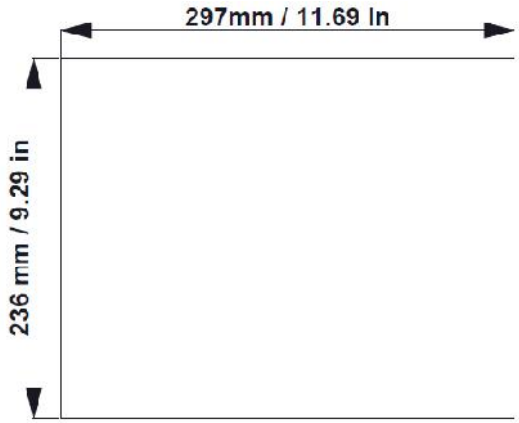


Fig.6-7: Panel cut-out dimension for IP10IA99

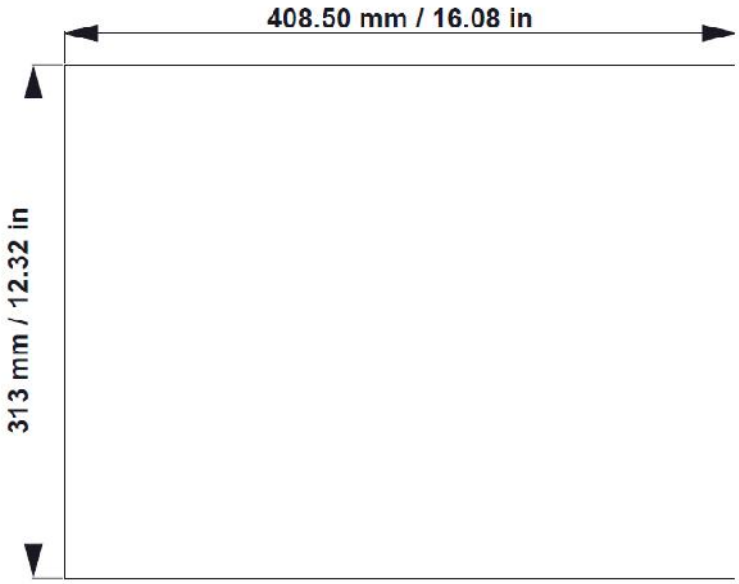


Fig.6-8: Panel cut-out dimension for IP15IA99

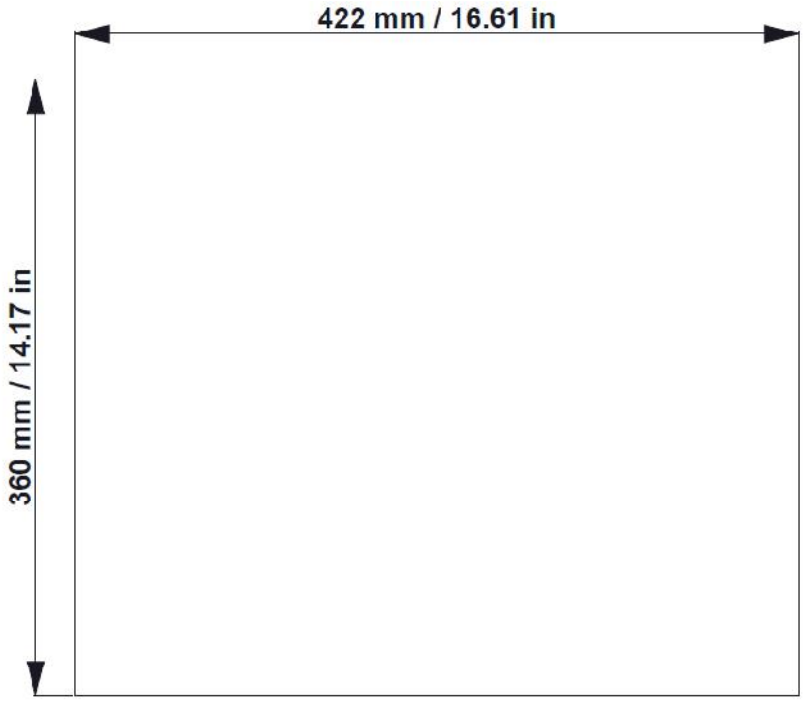
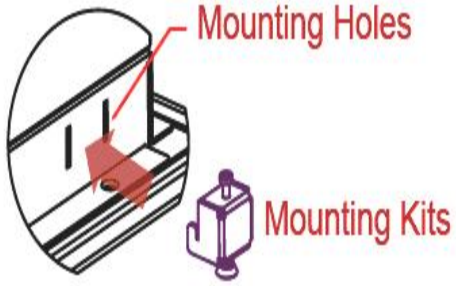


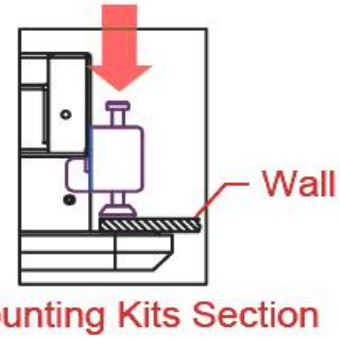
Fig.6-9: Panel cut-out dimension for IP17IA99

Table 6-1: Cut-out Dimension by Panel size.

(mm)	A	B	C	D	Mounting Kits
IP10IA99	6.5	46.0	297.0	236.0	8
IP15IA99	7.0	49.4	408.5	313.0	16
IP17IA99	10.0	52.4	422.0	360.0	16

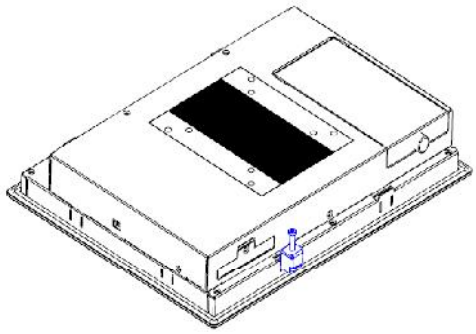
Hook Clip





Screw the Clip tightly (Spec＜＝1.35 N)

Hook the mounting clamps with screws (included) from the rear side of the panel



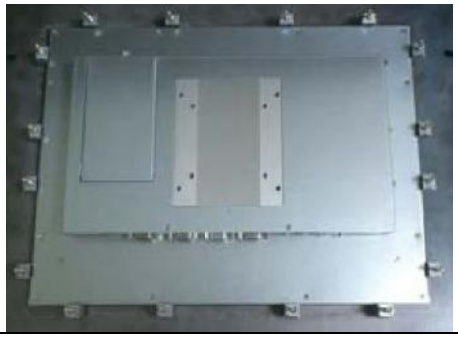


Fig.6-10 : Mounting kit step by step

In order to ensure NEMA 4 front sealing against dust and water, mount the system on a non-textured surface. Before you install Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, into a panel or a sub-frame for industrial cabinet, verify the perfect condition of the seal at the rear of the front plate. The seal has to be in place without injury/defects and dirt.

6.2.2 VESA® Mounting Plate (Optional)

The OIC (Operator Interface Computer) 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, can be installed with the provided (as optional part) VESA® 75/100 compliant adapter plate (refer to #4, Fig.5-25).

Each VESA® 75/100 compliant mounting plate must be fasten to the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, with four M4 x 4 metric screws (included).

Do not use longer screws than the original screws provided. Using longer screws may do harm to the internal components of the system.

6.2.3 Wall Mounting of the External AC/DC Adapter

In order to fix the AC/DC adapter for mounting onto a wall, a wall mount plate and housing are included. For DIN Rail mounting, a DIN Rail clip is included which can be mounted to the rear side of wall mount plate. The available mounting holes of the wall mount plate allow attaching the adapter to a wall in a vertical as well as a horizontal position.

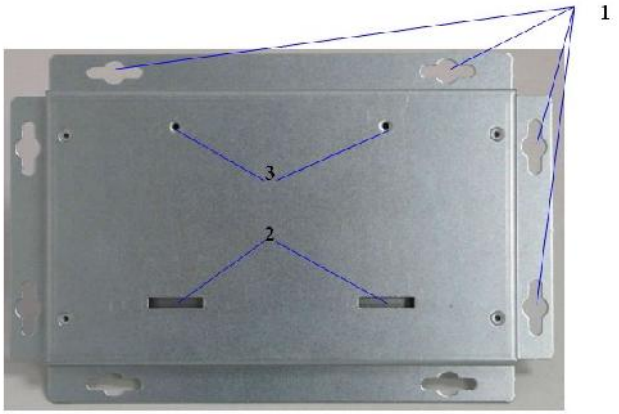


Fig.6-11: Inside of the wall mount plate for the AC/DC adapter

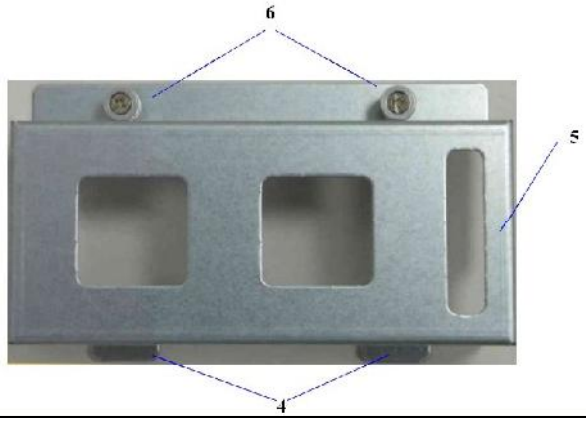


Fig.6-12: Housing for the AC/DC adapter (only for wall mounting)

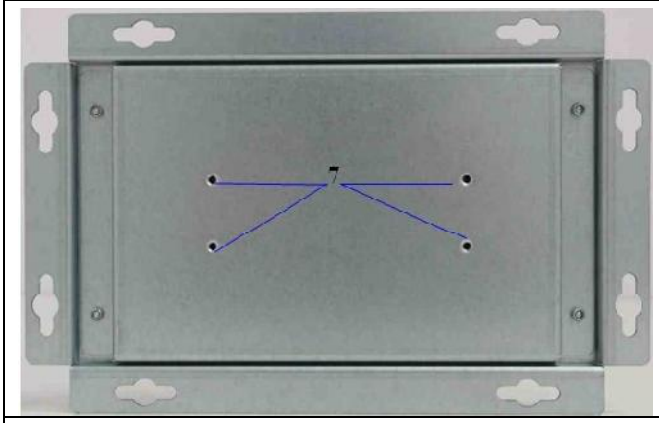


Fig.6-13: Rear side of the mounting plate without DIN Rail clip

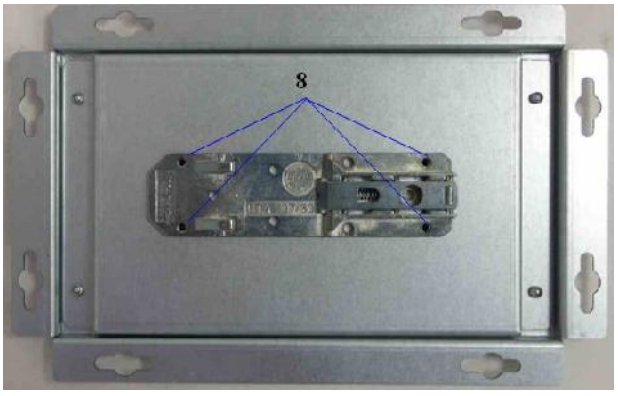


Fig.6-14: Mounting plate with DIN Rail clip

Description for Fig.6-11, Fig.6-12, Fig.6-13, and Fig.6-14:

1 Key holes for mounting to a wall in horizontal or vertical position

2 Anchor slots of the mounting plate (to hook

5 Housing for the AC/DC adapter (only for wall mounting)

6 Anchor latches of the housing

in the housing for the AC/DC adapter)

3 Threaded holes for securing the housing with AC/DC adapter to the wall mount plate

4 Latch with captive screws, slotted flat head for securing the housing with AC/DC adapter to the wall mount plate

7 4x mounting holes for the DIN Rails clip that allow the clip mounting

8 DIN Rail clip

In order to attach the AC/DC adapter (Fig.5-27) onto the wall mount plate, follow these steps (Fig.6-11):

1. Insert the AC/DC adapter (Fig.5-27) into the cavity of the AC/DC adapter enclosure (Fig.6-12).
2. Position the enclosure (with inserted AC/DC adapter) against the wall mount plate and slide the enclosure carefully downwards in order to hook the anchor latches of the enclosure (#6, Fig.6-12) into the anchor slots (#2, Fig.6-11).
3. The enclosure will be shifted downwards until the latch with captive screws of the enclosure (#4, Fig.6-12) and the threaded holes (#3, Fig.6-11) of the wall-mount plate are aligned.
4. Tighten on the captive screws. The captive screws must be firmly tightened.

6.3 Getting started

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is designed to be powered from a DC power source via the included DC power cable. In order to use an AC power source as main power source, an AC/DC adapter (not included) can be ordered.

- Before using your system, you should first become familiar with the system components and check that everything is connected properly. Following a proper cabling procedure will prevent a false power-on condition, which could result in unit operational failure.
- Also, it is recommended that the last cable attached to the system should be the power cable.

6.3.1 Connecting to DC Power Source

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, will be connected to DC power source using the supplied DC power cable (refer to Fig.5-26)

Fig.6-15 : Connecting to DC power source with open lead cable

1. Connect the 5-pin DC power connector of the DC power cable (refer to Fig.5-26) to the appropriate DC power connector (refer to #12, Fig.5-15) of the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99. The DC power connector of the system is on the rear bottom side and is labeled "12V/24V (+/-20%) DC". Make sure the connector is locked tightly in place.

2. Ensure that the DC power source is switched off via an isolating switch, in order to ensure that no power is flowing from the external power source during the connection procedure.

3. Connect the other end of the DC power cable (wires with lug terminals) (refer to Fig.5-26) to the terminals of the 24V DC power source. The wires of the DC power cable are labeled (+) and (-) to indicate their polarity. Ensure that the power connections maintain the proper polarity.

4. Switch on the isolating switch in order to apply voltage to the terminals of the power source (cable wires).

5. Turn on the system via the power button (refer to "Power Button and Power LED").

Hints for DC power connection: The DC power source should be able to be switched off and on via an isolating switch. The unit is only completely disconnected from the DC main power source, when the DC power cord is disconnected either from the power source or the unit. Therefore, the DC power cord and its connectors must always remain easily accessible.

6.3.2 Connecting to AC Power Source via the AC/DC Adapter

The Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, can be optionally connected to an AC power source via the optional AC/DC adapter (refer to Fig. 5-27).

Fig.6-16 : Connecting to AC power source via the AC/DC adapter

1. Connect the 5-pin DC connector of the AC/DC adapter (refer to Fig.5-27) to the appropriate DC power connector (refer to pos. 12, Fig.5-15) of the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99. The DC power connector of the system is on the rear bottom side and is labeled "12~24V DC". Make sure the connector is securely locked in place.

2. Connect the AC power cord to the AC/DC adapter.

3. Plug the AC connector of the adapter into an AC wall outlet of the AC power source.
4. Turn on the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, via the power button (refer to "Power Button and Power LED").

Please observe the recommendations given in the section of "Safety Instructions". Attach the supplied AC power cable (for EU or US) that corresponds to the requirements of the country where the system is used.

6.4 BIOS Setup

Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99 is equipped with the AMI BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, the built-in_Main board_communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

6.4.1 Entering Setup -- Launch System Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <Del> key to enter Setup.

Press <Del> to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing

<Ctrl>, <Alt>, and <Delete> keys.

Press <F1> to Run SETUP or Resume

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen. (Fig 6-17)

6.4.2 Main

Use this menu for basic system configuration (Fig 6-17), such as time, date etc.

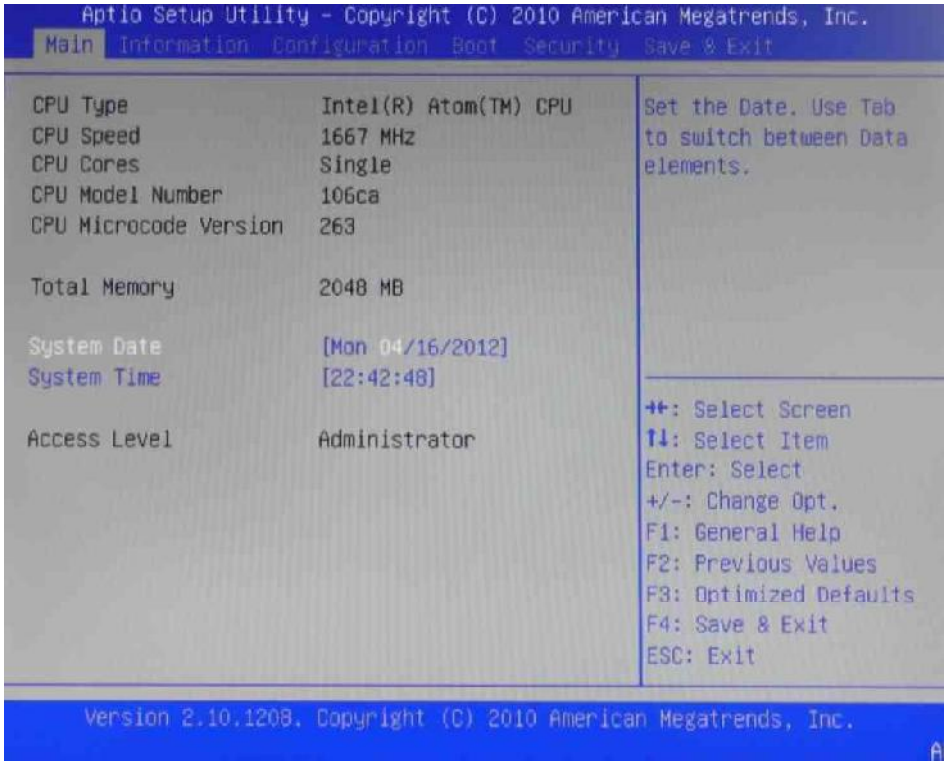

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Information Configuration Boot Security Save & Exit
CPU Type Intel(R) Atom(TM) CPU
CPU Speed 1667 MHz
CPU Cores Single
CPU Model Number 106ca
CPU Microcode Version 263
Total Memory 2048 MB
System Date [Mon 04/16/2012]
System Time [22:42:48]
Access Level Administrator
Set the Date. Use Tab to switch between Data elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-17：Setup Program Initial Screen

AMI BIOS, CPU, System Memory

These items show the firmware and hardware specifications of your system. Read only.

System Date

The date format is <Day>, <Month> <Date> <Year>. Use [+] or [—] to configure system Date.

System Time

The time format is <Hour> <Minute> <Second>. Use [+] or [—] to configure system Time.

6.4.3 Information

Use this menu for basic system configurations, such as system information, product feature and technical important issue etc.

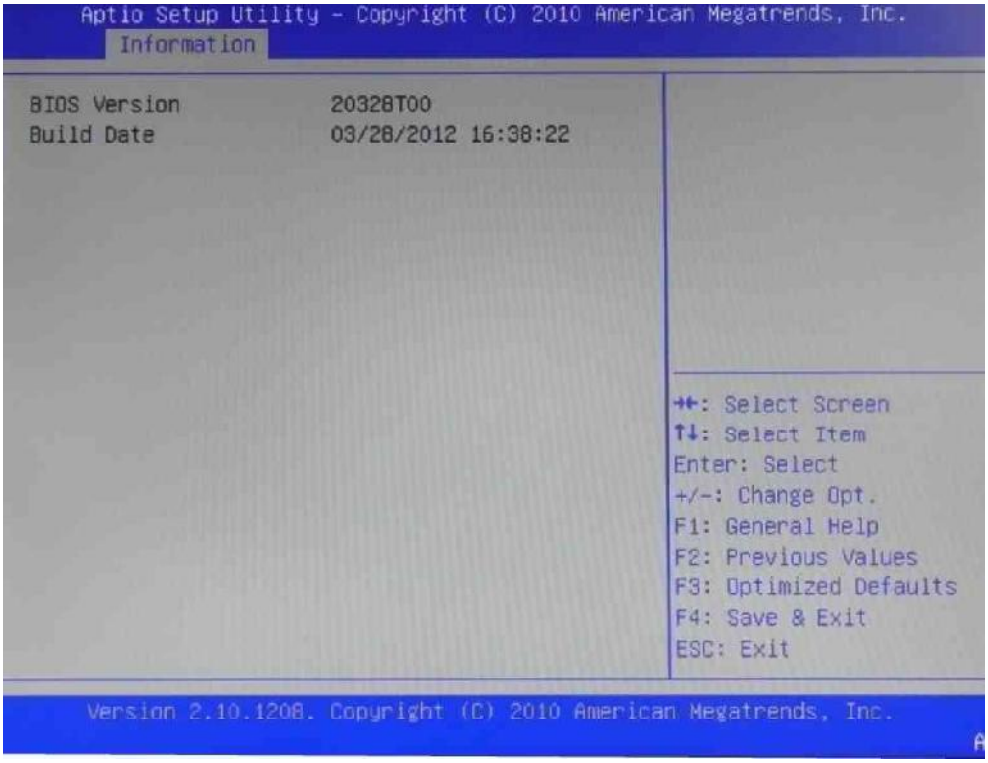


Fig.6-18：System Information

6.4.4 Configuration

Use this menu to set up the items of special enhanced features.

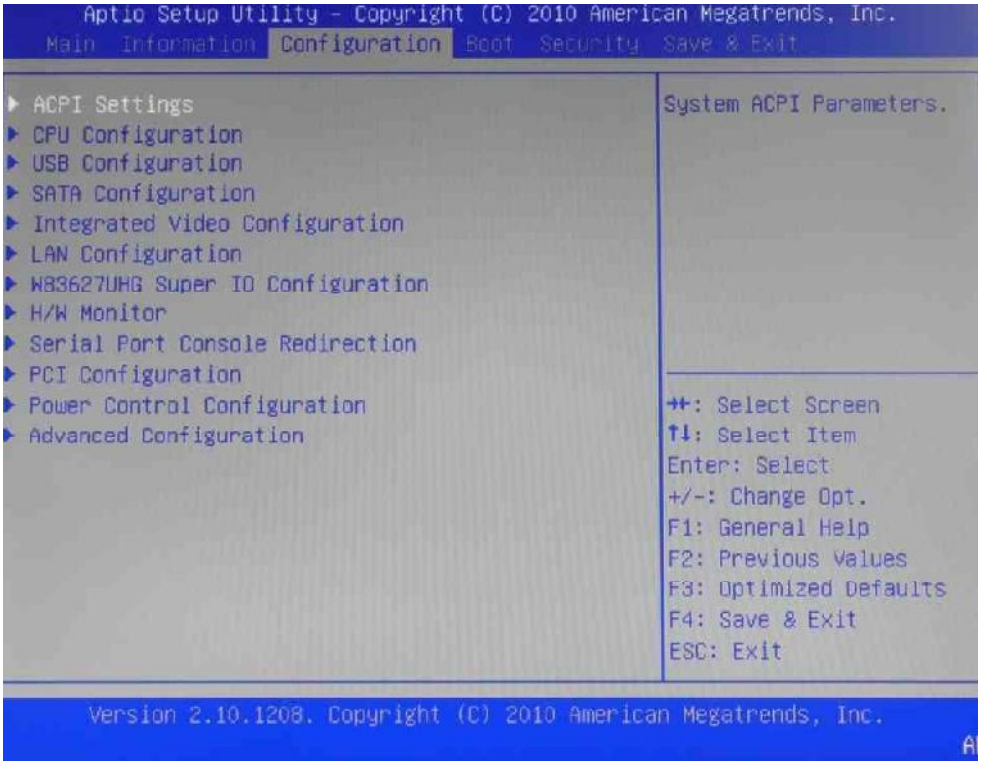


Fig.6-19：Setup Program Initial Screen

ACPI Settings

Select for Advanced ACPI Configuration.
This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, you can choose to enter the Standby mode in S1 (POS) or S3 (STR) fashion through the setting of this field.

Options are:
[S1 (POS)] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system contexts.
[S3 (STR)] The S3 sleep mode is a lower power state where the information of system configuration and open applications/ files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a “wake up” event occurs. (Default)

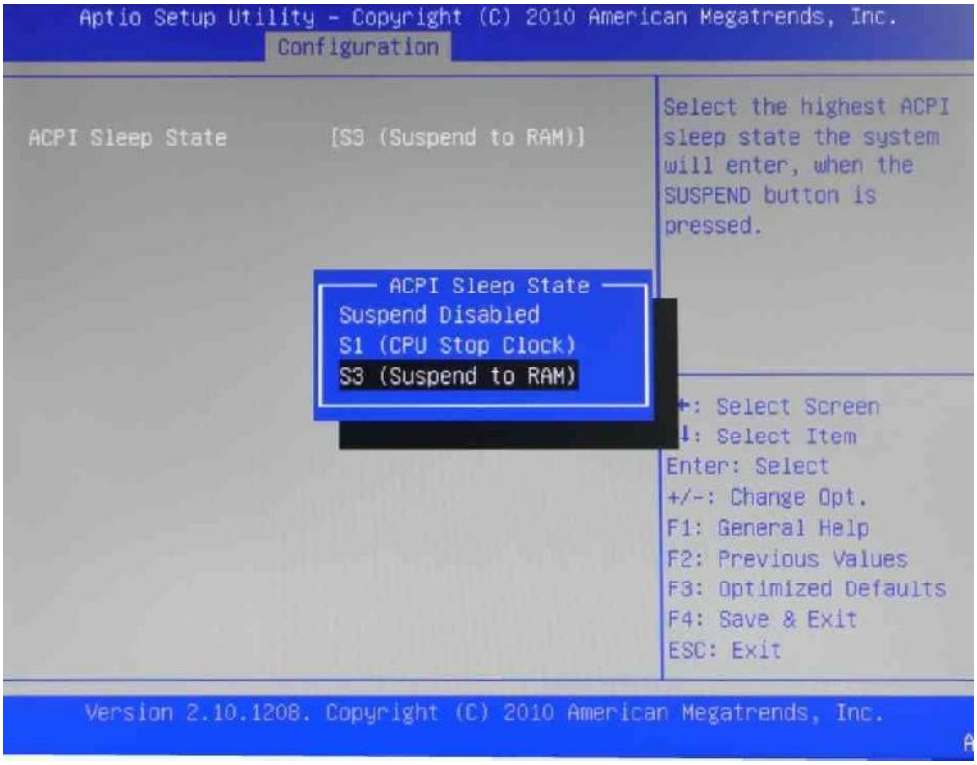

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Configuration
ACPI Sleep State [S3 (Suspend to RAM)]
Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.
ACPI Sleep State
Suspend Disabled
S1 (CPU Stop Clock)
S3 (Suspend to RAM)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-20：ACPI Configuration

CPU Configuration

These items show the advanced specifications of your CPU. Read only.

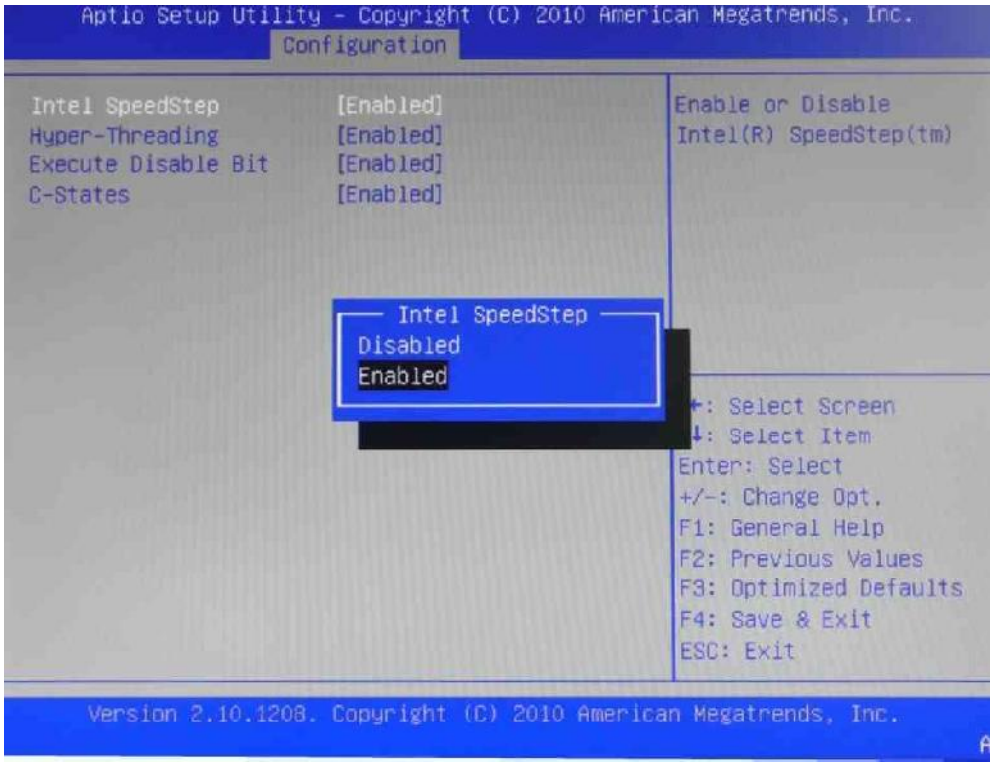


Fig.6-21：CPU Configuration

Intel(R) Speed Step (tm)

Disable: Disable.
Enable: Enable. (Default)

Hyper Threading Technology

“Enabled” for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and “Disabled” for other OS (OS not optimized for Hyper-Threading Technology).

The choice: Enabled (Default), Disabled.

Execute-Disable Bit capability

XD can prevent classes of malicious buffer overflow attacks when combined with a supporting OS.
The choice: Enabled (Default), Disabled.

C-States

CPU idle is set to Enhanced C-States.
The choice: Enabled (Default), Disabled.

USB Configuration

Legacy USB Support

Enables Legacy USB support. AUTO option disables legacy support if no USB device is connected. Disable option will keep USB devices available only for EFI application.
The choice: Disabled, Enabled, Auto.

EHCI Hand-Off

This is a workaround for OS without EHCI hand-off support. The EHCI ownership change should claim by EHCI driver.
The choice: Disabled, Enabled.

USB 2.0 Controller port

Port 0~5
The choice: Disabled, Enabled.

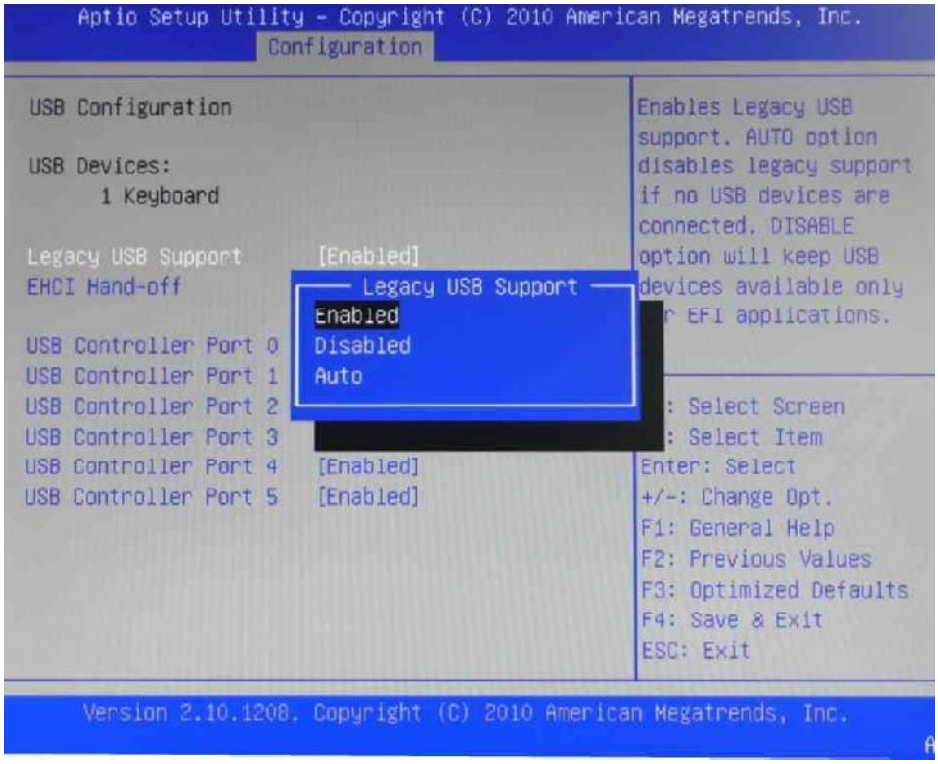

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Configuration
USB Configuration
USB Devices:
1 Keyboard
Legacy USB Support [Enabled]
EHCI Hand-off
USB Controller Port 0
USB Controller Port 1
USB Controller Port 2
USB Controller Port 3
USB Controller Port 4 [Enabled]
USB Controller Port 5 [Enabled]
Legacy USB Support
Enabled
Disabled
Auto
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only
r EFI applications.
: Select Screen
: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-22：USB Configuration

SATA Configuration

It uses a separate sub menu to configure each hard disk drive.

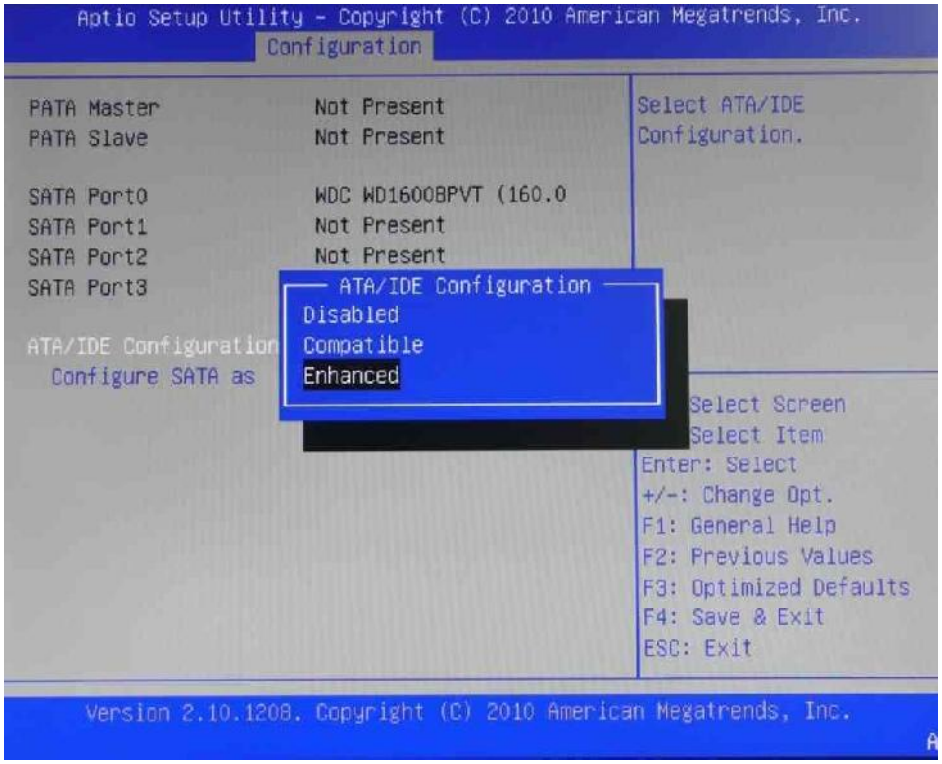


Fig.6-23：SATA Configuration

ATA/IDE Configuration

The choice: Disabled, Compatible, Enhanced (Default).

Legacy IDE Channels

The choice: IDE Only (Default).

Integrated Video Configuration

Share memory size

This option determines the amount of system memory that can be used by the internal graphics device.

- Disable
- Enable, 1MB of memory used by internal graphics device
- Enable, 8MB of memory used by internal graphics device (Default)

DVMT Mode Select

Use this option to select the Intel Dynamic Video Memory Technology (DVMT) operating mode.
Fixed Mode : A fixed portion of graphics memory is reserved as graphics memory.
DVMT Mode : Graphics memory is dynamically allocated according to the system and graphics needs. (Default)

DVMT/FIXED Memory

Select DVMT/FIXED Mode Memory size used by Internal Graphic Device. Configuration options are listed below.

- 128 MB
- 256 MB (Default)
- Maximum

IGD-Boot Type

Use this option to select the display device used by the system when it boots. Configuration options are listed below.
VIBOS DEFAULT
CRT
LVDS
CRT+LVDS (Default)

LVDS Panel Type

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.
Configuration options are listed below.

800 x 600	LVDS	(10.4" Default)
1024 x 768	LVDS	(15.0" Default)
1280 x 1024	LVDS	(17.0" Default)
1400 x 1050	LVDS	
1600 x 1200	LVDS	
1280 x 768	LVDS	
1680 x 1050	LVDS	
1920 x 1200	LVDS	
1280 x 600	LVDS	
1280 x 800	LVDS	
2048 x 1536	LVDS	

GMCH BL Control

Use this option to select the Level 1~5 of LED Backlight Brightness.
Level 1 is min. LED backlight brightness

Level 5 is max. LED backlight brightness

Active LVDS

Use this option to select the Active LFP configuration

No-LVDS: VBIOS does not enable LVDS.

Int-LVDS: VBIOS enables LVDS driver by integrated encoder. (Default)

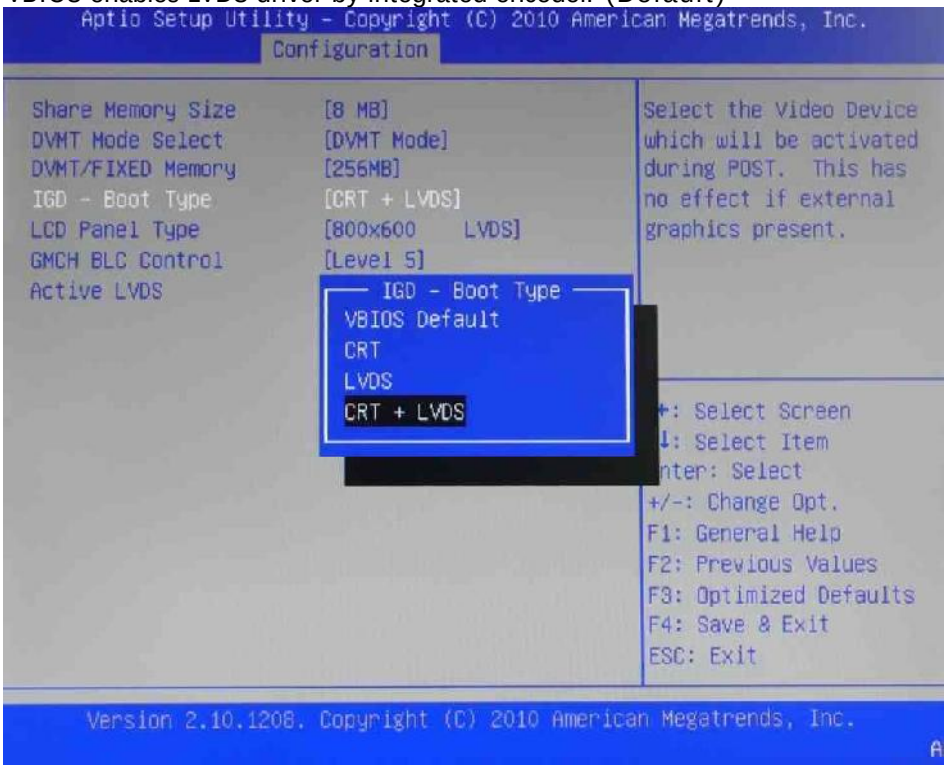

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Configuration
Share Memory Size [8 MB]
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
IGD - Boot Type [CRT + LVDS]
LCD Panel Type [800x600 LVDS]
GMCH BLC Control [Level 5]
Active LVDS
IGD - Boot Type
VBIOS Default
CRT
LVDS
CRT + LVDS
Select the Video Device which will be activated during POST. This has no effect if external graphics present.
+: Select Screen
↓: Select Item
nter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-24：Integrated Video Configuration

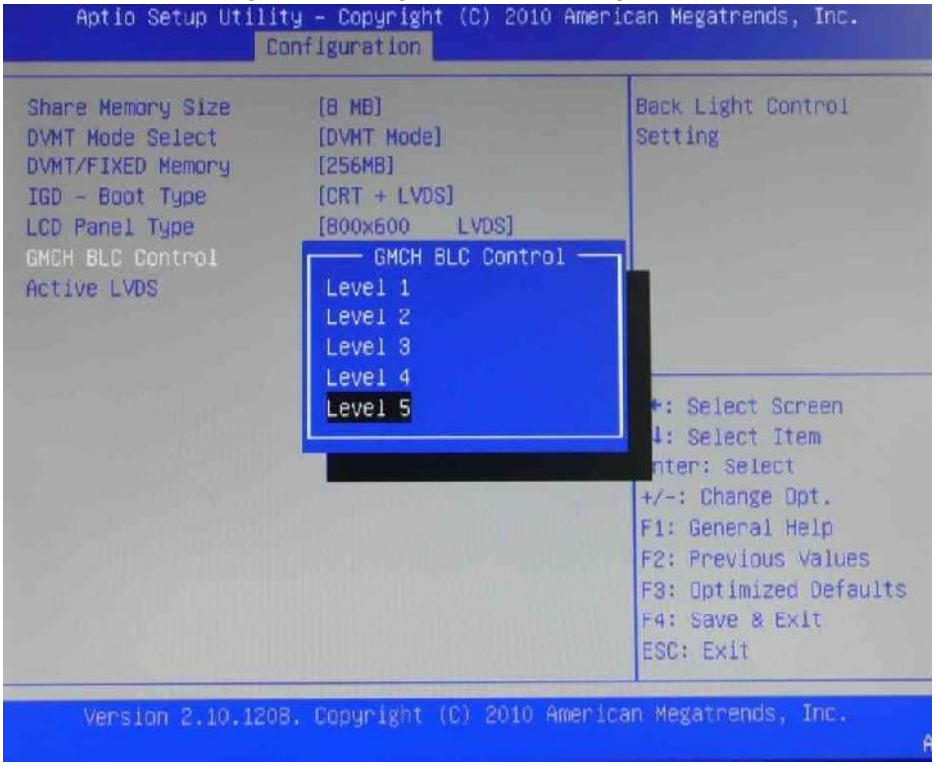


Fig.6-25：GMCH BLC Control

LAN Configuration

Launch PXE OpROM

Use this option to select Enabled or Disabled (Default) option for Legacy Network Devices.

LAN Wake Up

This field specifies whether the system will be awakened from the S5 .power saving mode when activity or input signal of onboard LAN is detected.

The choice: Enabled (Default), Disabled

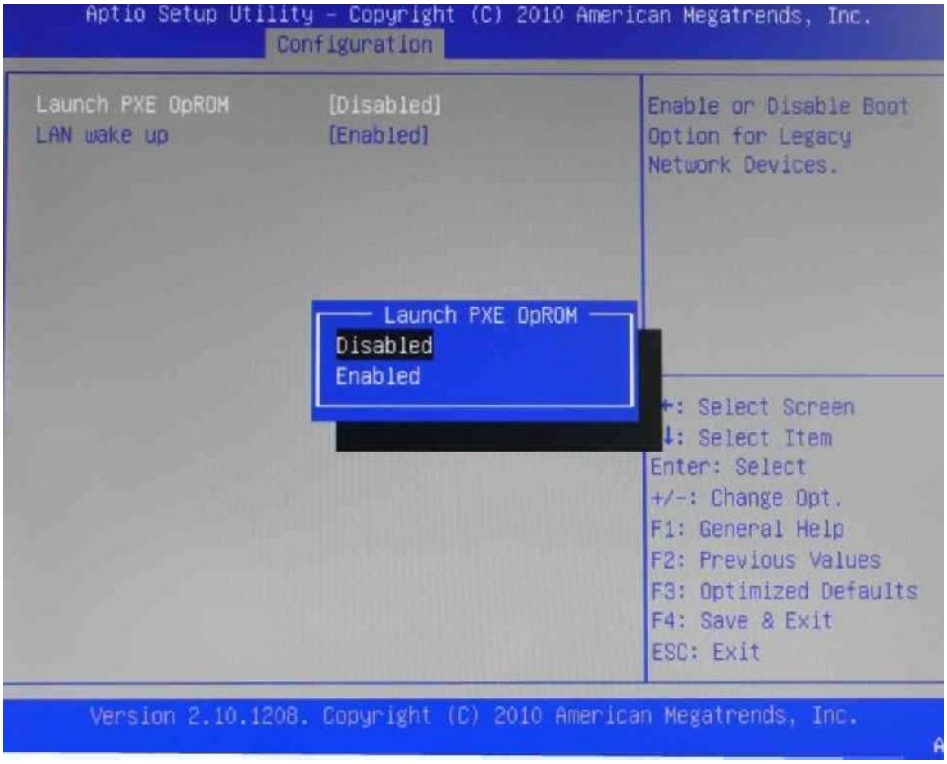


Fig.6-26：LAN Configuration

W83627UHG Super IO Configuration

This System is using Super IO Chip: W83627UHG，there are Port1~port4 COM port for selection.

When you select Port 1,2,3 or 4, the relational contents are as below：

Serial Port (Selectable COM port mode through BIOS)

Enable (Default) or disable Serial Port (COM).

Device Setting ：IO=3F8h；IRQ=4；

Mode：Select for COM port (COM1 & COM2 only) mode RS-232 (Default), RS-422 or RS-485.

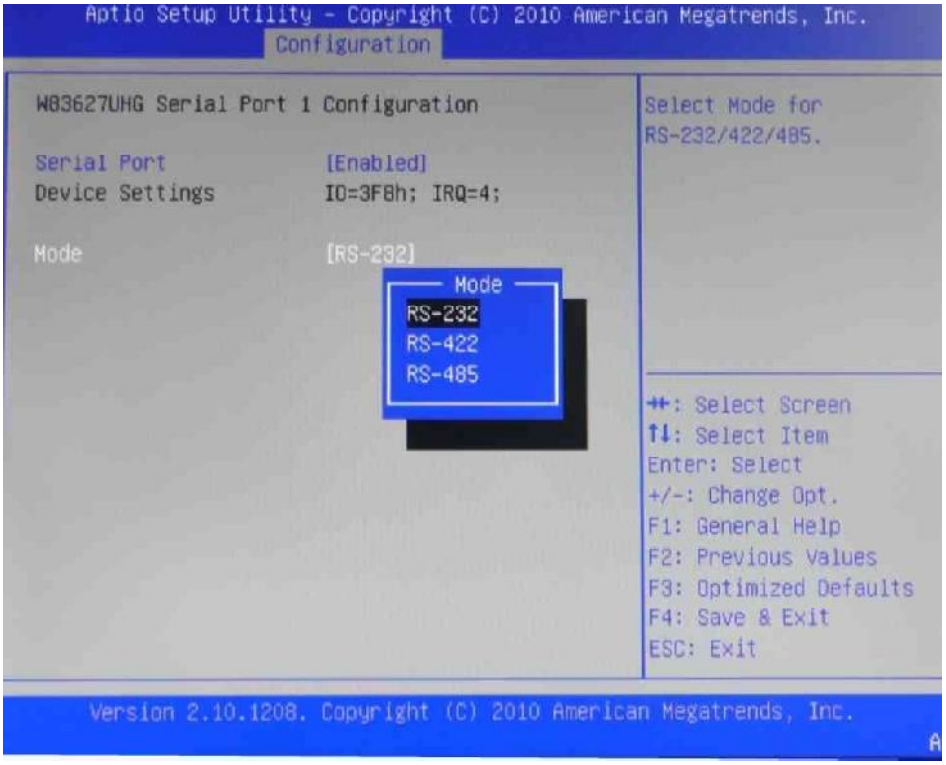


Fig.6-27：W83627UHG Serial Port 1 Configuration

WDT Function.

Select WDT Function is Enabled or Disabled (Default)

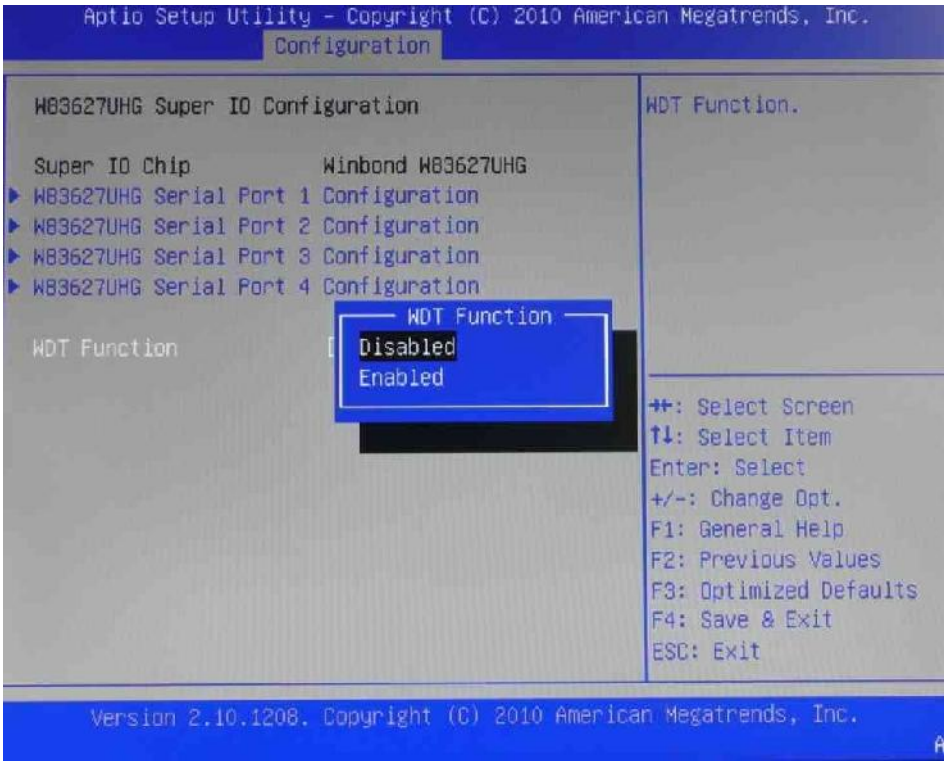


Fig.6-28：W83627UHG Super IO Configuration

H/W Monitor

This function is real-time detecting system status, CPU temperture, System temperture, relational Volts (12V, 3.3V)

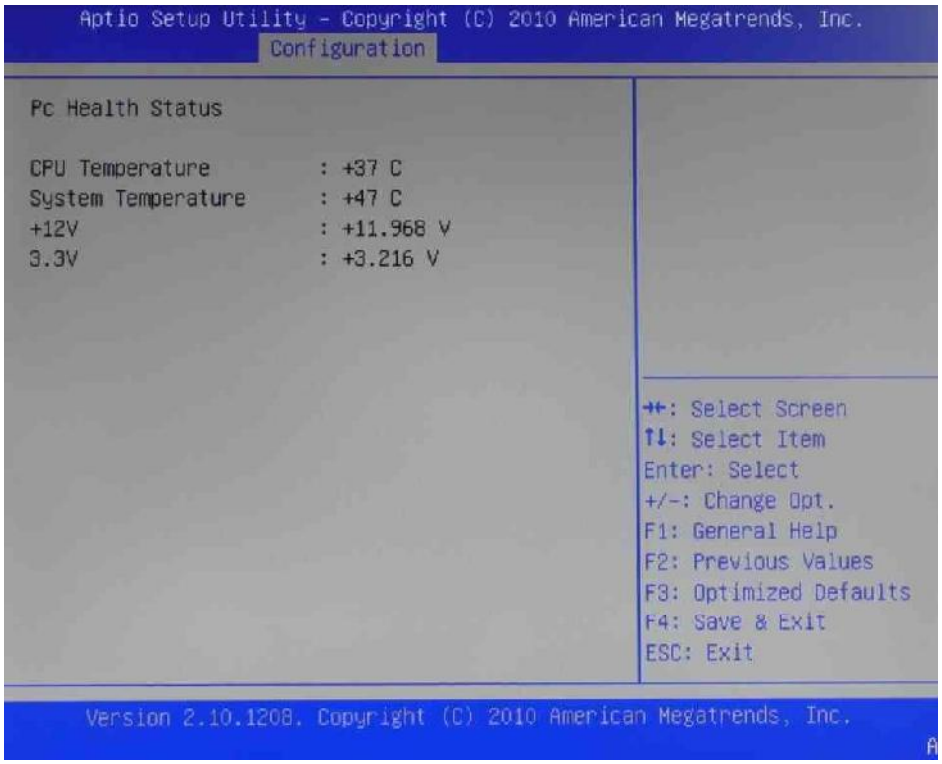


Fig.6-29：H/W Monitor Configuration

Serial Port Console Redirection Configuration

Console Redirection

Use this option to specify when console redirection should occur：

Disabled the console is not re-directed after POST (Default)

Enabled Redirection is active during POST and during Boot Loader

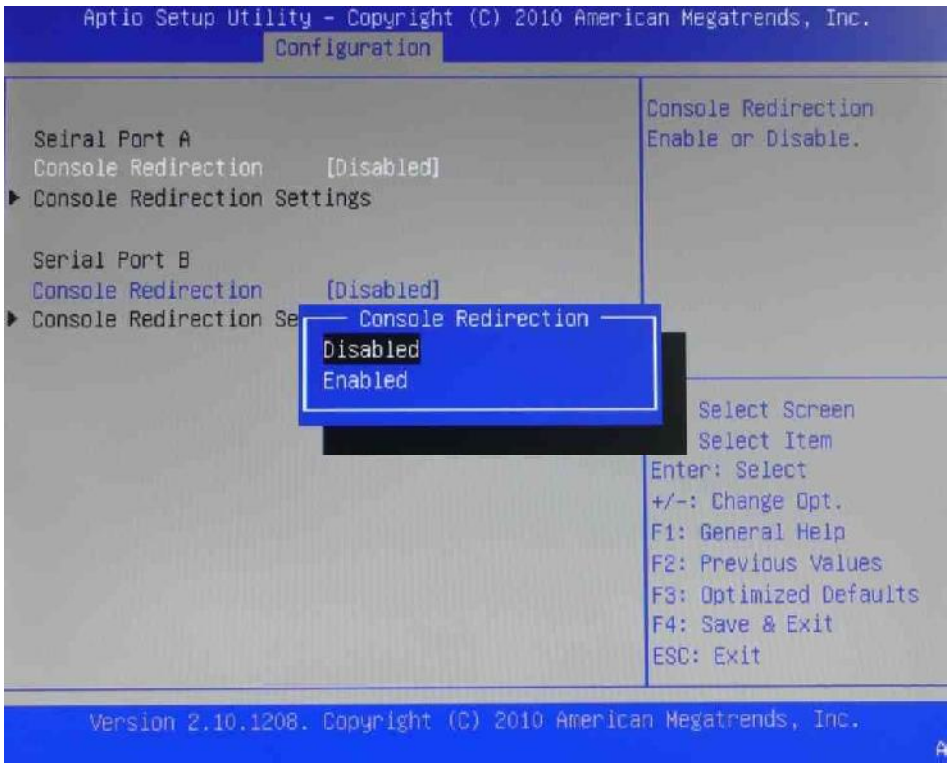


Fig.6-30：Serial Port Console Redirection Configuration

PCI Configuration

PCI BUS Driver Version

V2.03.00

PCI ROM Priority

In this system with Multiple option ROMs
The Choice：Legacy ROM and EPI Compatible ROM (Default)

Launch Storage OpROM

Enabled (Default) or Disable Boot Option for Legacy Mass Strorage Devive with Option ROM

PCI Latency Timer

Select value in units of PCI clocks for PCI device latency timer register.
The choice: 32 (Default), 64, 96, 128, 160, 192, 224, 248

PCI Express Device Setting

To Set each PCI Express Enabled (Default) and Disabled.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow system BIOS to select the value
The choice: Auto (Default), 128, 256, 512, 1024, 2046, 4096.

ASPM Support

Ser the ASPM level:
Force Lo: Force all links to State;
Auto: BIOS auto configuration.
Disable: Disables ASPM (Default)

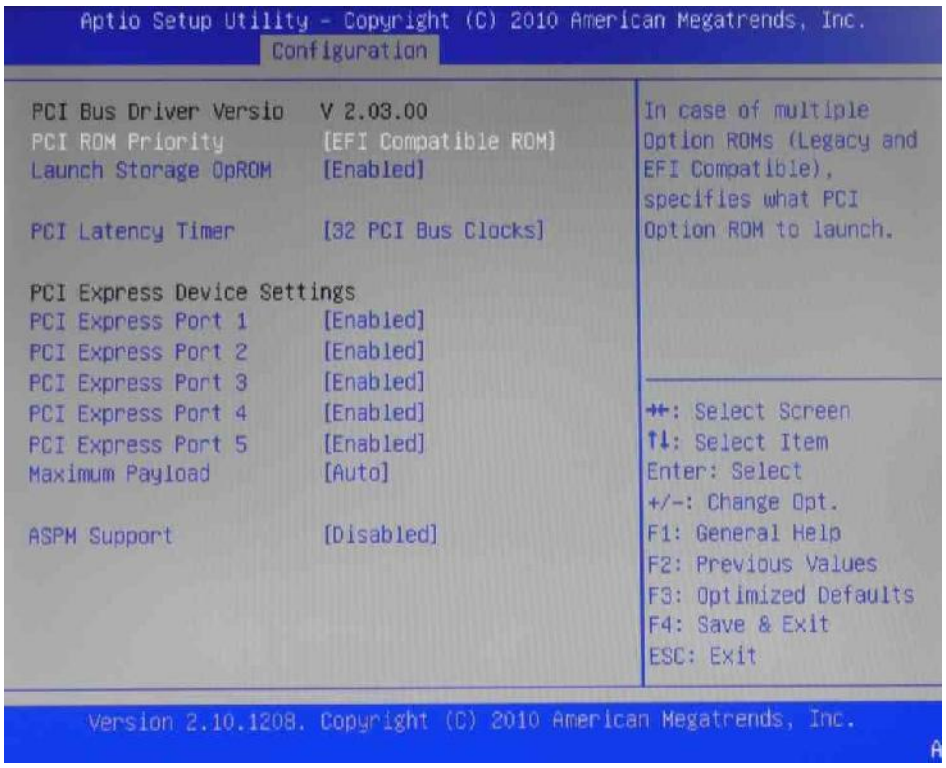

Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Configuration
PCI Bus Driver Versio V 2.03.00
PCI ROM Priority [EFI Compatible ROM]
Launch Storage OpROM [Enabled]
PCI Latency Timer [32 PCI Bus Clocks]
PCI Express Device Settings
PCI Express Port 1 [Enabled]
PCI Express Port 2 [Enabled]
PCI Express Port 3 [Enabled]
PCI Express Port 4 [Enabled]
PCI Express Port 5 [Enabled]
Maximum Payload [Auto]
ASPM Support [Disabled]
In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-31：15 PCI Configuration

Power Control Configuration

Wake system with Fixed Time

Enabled or Disabled (Default) System wake on alarm event. When enabled System will wake on the hr:min:sec. specified.

Wake system with Dynamic Time

Enabled or disabled (Default) System wake on alarm event. When system enabled will wake on the current time + Increase minute(s).

PME Wake-up function

Enabled or Disabled.

Restore AC Power Loss

Use this option to specify what state the system returns to if there is a sudden loss of power to the system.

Power Off：The system remains turned off

Power On：The system turns on (Default)

Last State：DEFAULT the system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

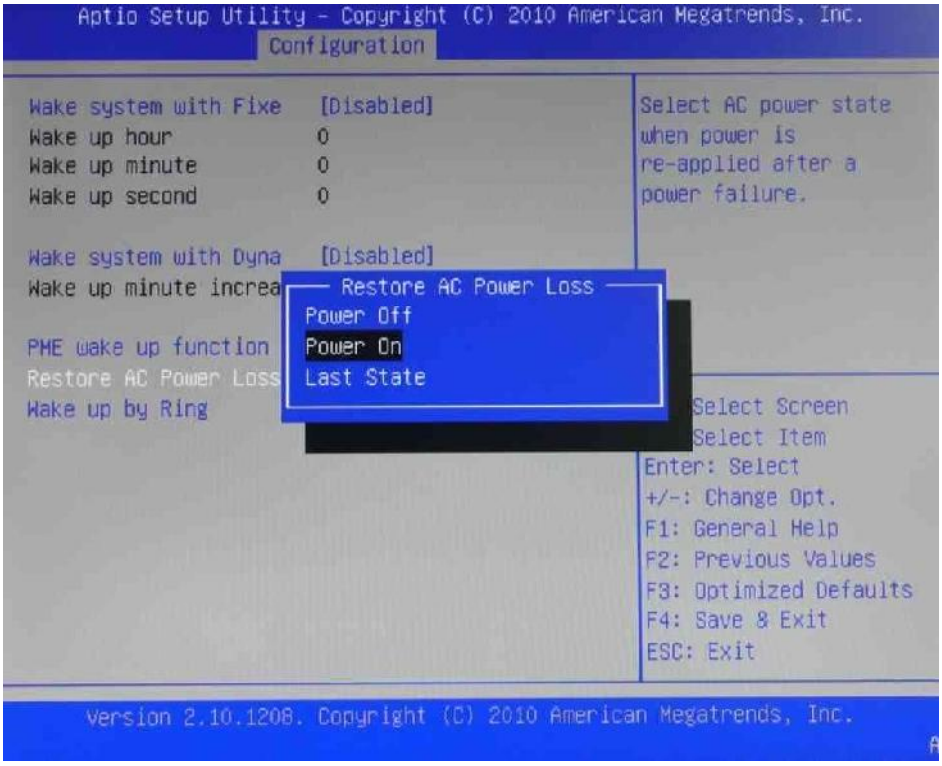

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Configuration
Wake system with Fixe [Disabled]
Wake up hour 0
Wake up minute 0
Wake up second 0
Wake system with Dyna [Disabled]
Wake up minute increa
PME wake up function
Restore AC Power Loss
Wake up by Ring
Restore AC Power Loss
Power Off
Power On
Last State
Select AC power state when power is re-applied after a power failure.
Select Screen
Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-32：Power Control Configuration

Wake up by Ring

Use this option to enable activity on the RI (ring in) modem line to rouse the system from a suspend or standby state. That is, the system will be roused by an incoming call on a modem.

Disabled：Wake event not generated by an incoming call (Default)

Enabled：Wake event generated by an incoming call

Advanced Configuration

Spread Spectrum Control

Enabled or Disabled (Default)

Rounte Port 80h to

LPC (Default) or PCI

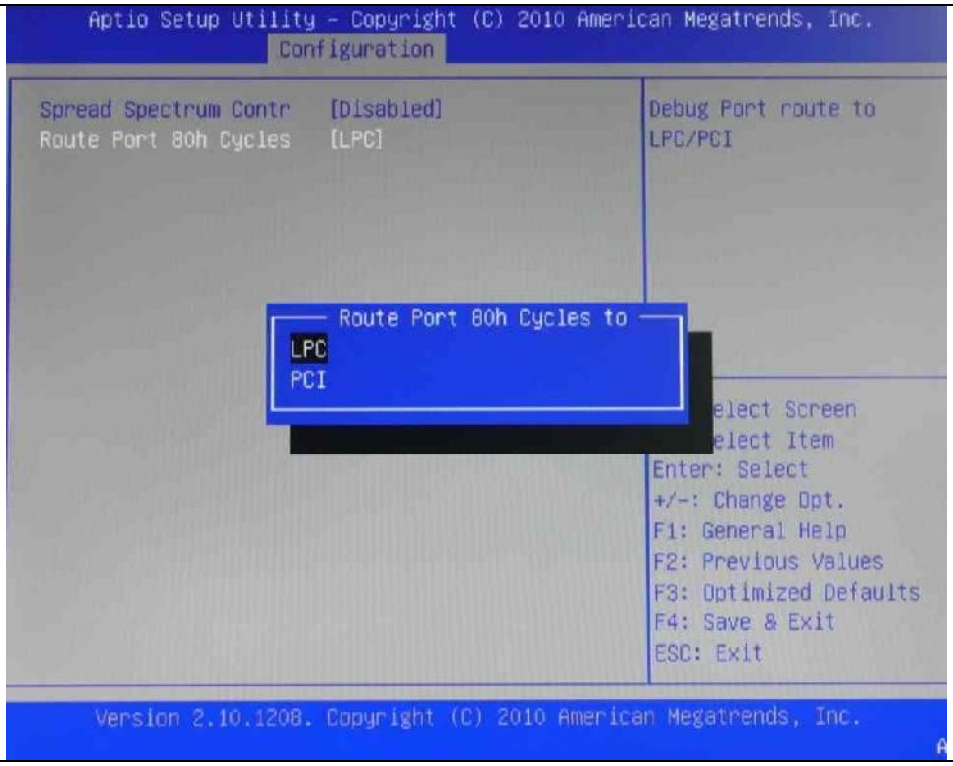


Fig.6-33：Advanced Configuration

6.4.5 Boot

Quiet Boot

Use this option to select the screen display when the system boots.

Disabled Normal POST messages displayed (Default)

Enabled OEM Logo displayed instead of POST messages

Fast Boot

Use this option to make the computer speed up the boot process.

Disabled No POST procedures are skipped (Default)

Enabled Some POST procedures are skipped to decrease the system boot time

Boot Option#1

SATA

Disabled (Default)

Hard Drive BBS Priorities

SATA

Disabled (Default)

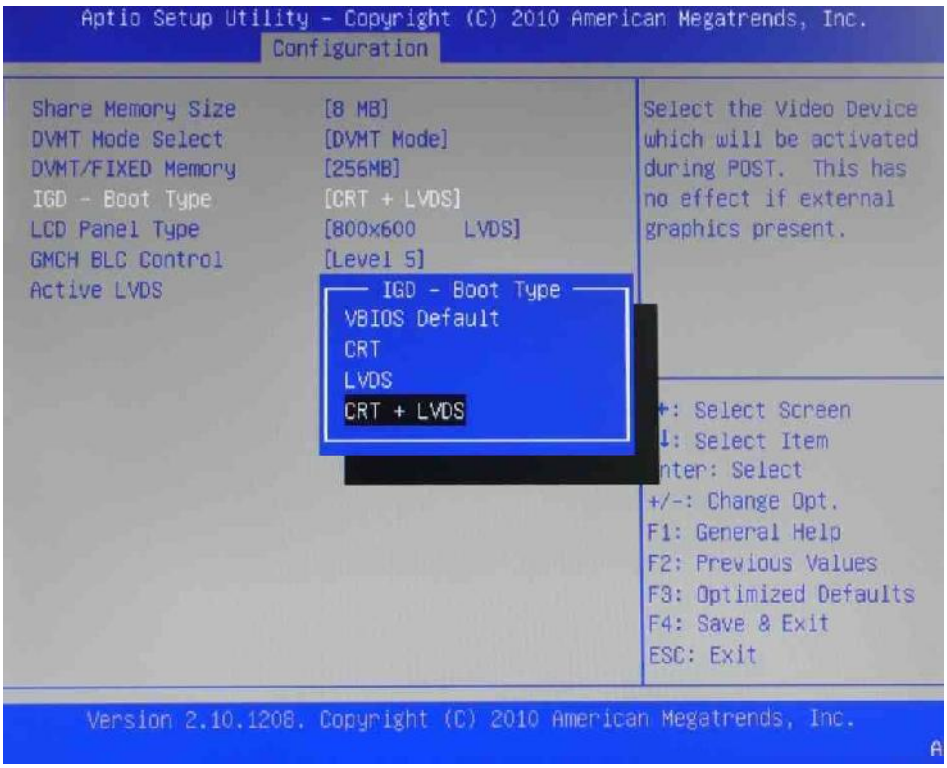

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Configuration
Share Memory Size [8 MB]
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
IGD - Boot Type [CRT + LVDS]
LCD Panel Type [800x600 LVDS]
GMCH BLC Control [Level 5]
Active LVDS
IGD - Boot Type
VBIOS Default
CRT
LVDS
CRT + LVDS
Select the Video Device which will be activated during POST. This has no effect if external graphics present.
+: Select Screen
↓: Select Item
nter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-34：Boot

6.4.6 Security

Use the Security option to set Administrator and user passwords.

If only the administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.

If only the user's password is set, then this is power on password and must be entered to boot or enter Setup .In setup the user will have Administrator rights.

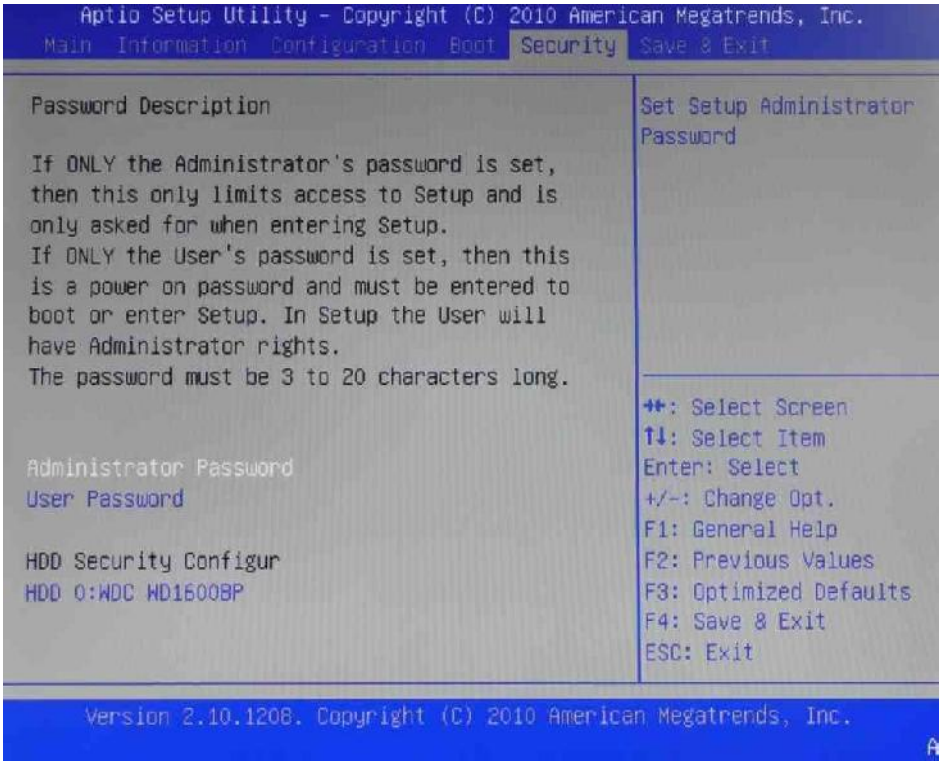

Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Main Information Configuration Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
Administrator Password
User Password
HDD Security Configur
HDD 0:WDC WD1600BP
Set Setup Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Fig.6-35：Security

6.4.7 Save and Exit

Save Changes and Exit

Exit System Setup after saving the changes.

Discard Changes and Exit

Exit System Setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without any saving any changes.

Save Changes

Save Change done so far to any of the setup option.

Discard Changes

Discard Change done so far to any of the setup option.

Restore Default

Restore/Load Default values for all the Setup Option.

Save as User Default

Save the Changes done so far as user defaults.

Restore as User Default

Restore the User defaults to all the Setup Option.

Boot Override

SATA: HDD (Default)

Launch EFI Shell from fileSystem

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available file System devices.

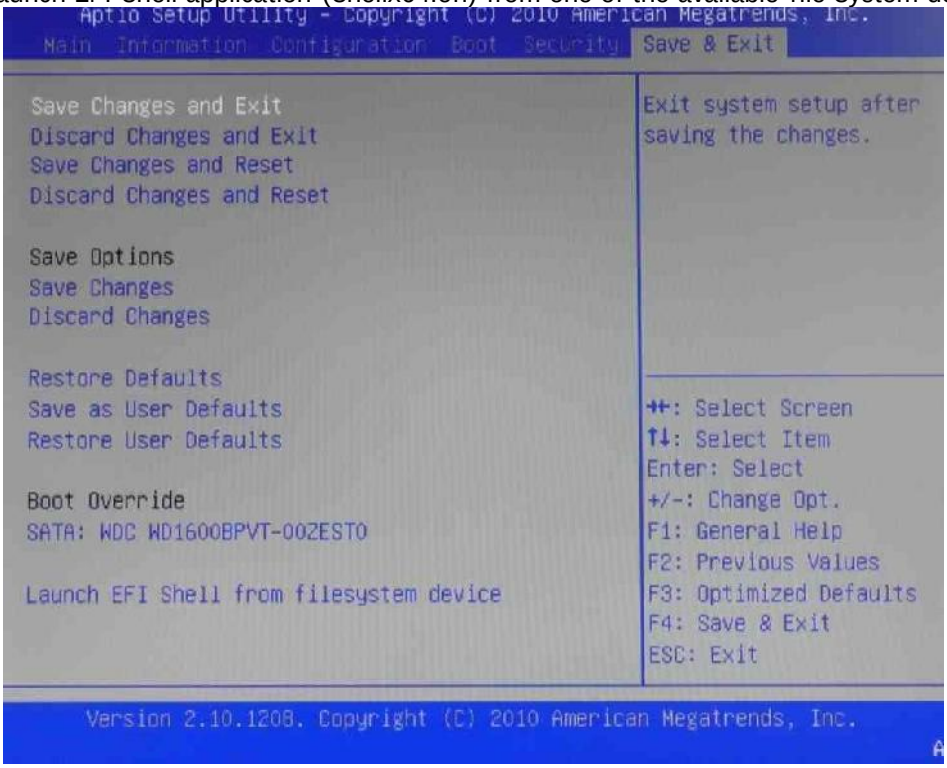


Fig.6-36：Save and Exit

6.5. Software Installation

6.5.1 Calibration of the Touch Screen

6.5.1.1 Calibrating of the Touch Screen

Calibration serves two purposes:

o Sets the active area of the touch screen.

o Aligns the active area of the touch screen to the screen's image.

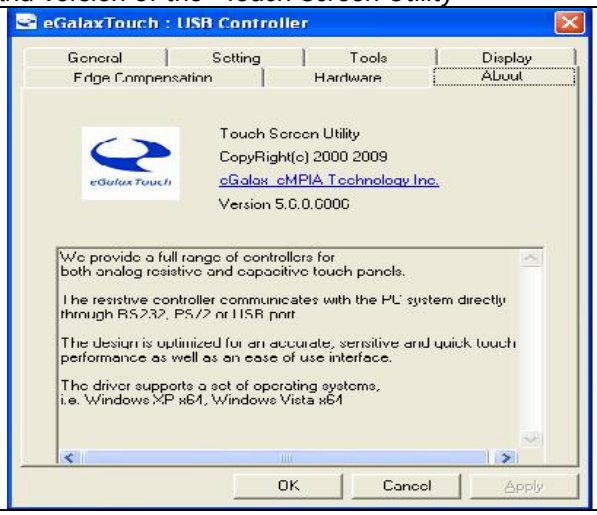
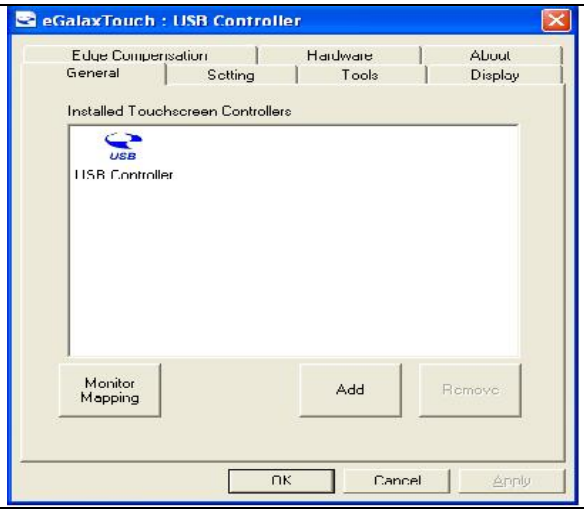
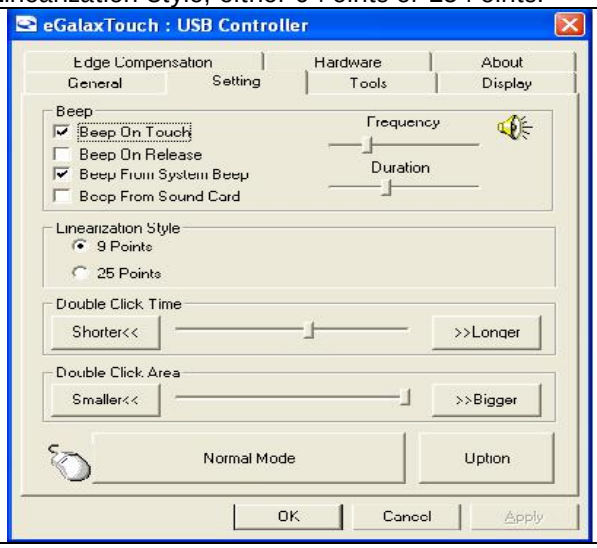
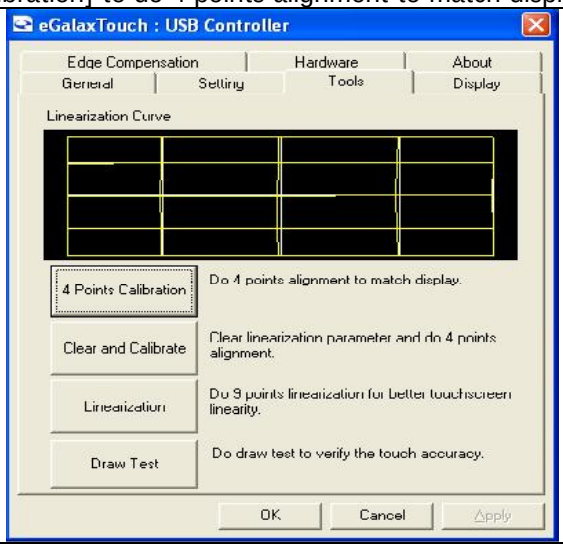
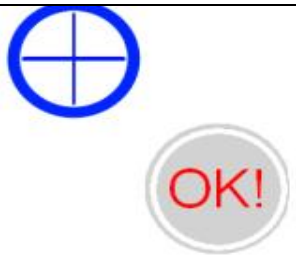
Before you calibrate the touch screen, let the system warm up for 30 minutes.

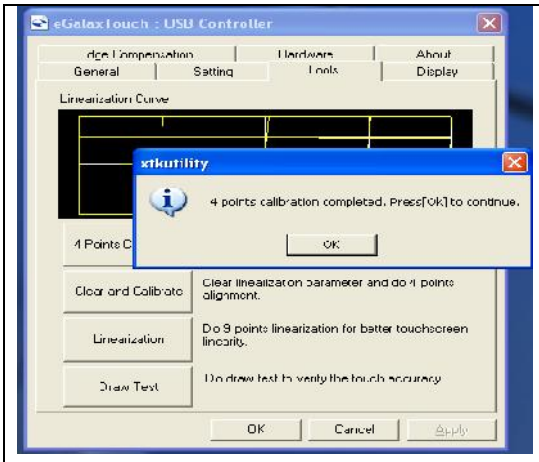
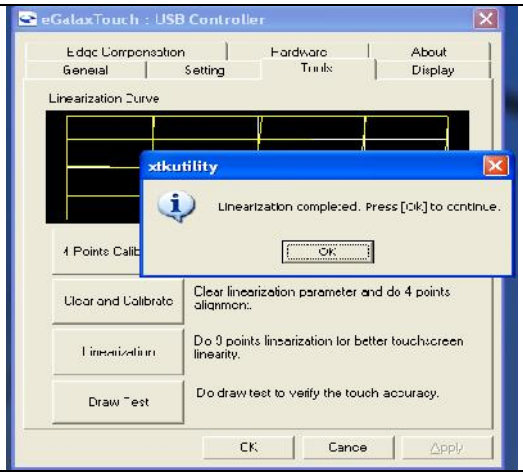
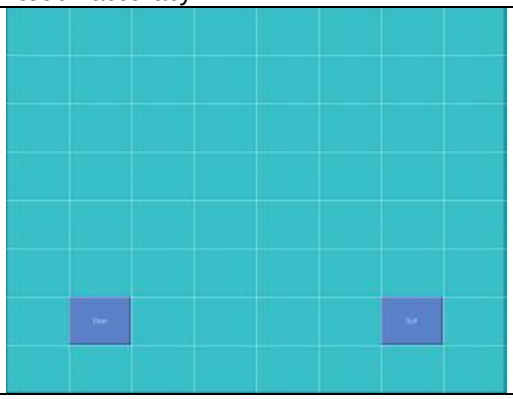
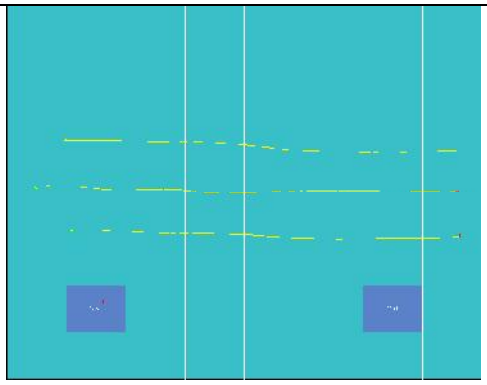
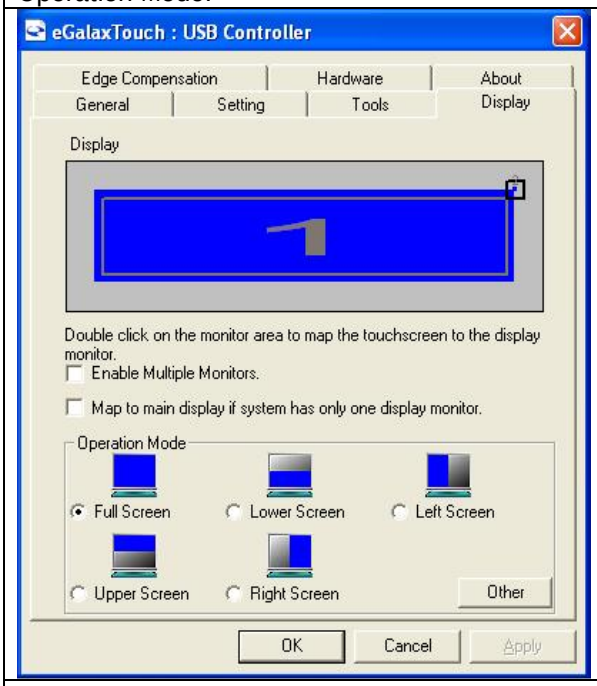
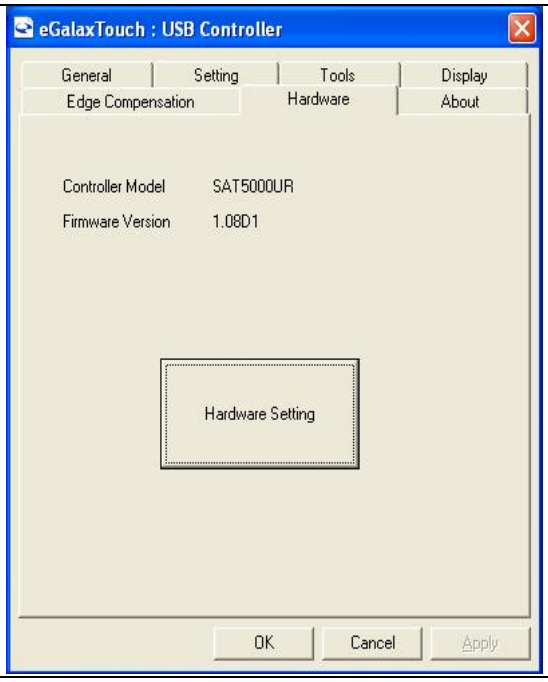
Calibration aligns the active touch-sensitive area of the touch screen with the image on the display. Calibration also determines the edges of the screen's image and locates the center of the touch screen. If the touch screen is not calibrated properly, the active area of the touch screen may not be aligned with the screen's image or may be unnecessarily small in size.

6.5.1.2 Calibrate the Touch Screen

The touch screen of in the Operator Interface Computer 10"/15"/17" NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99, is calibrated at the factory. The "Touch Screen Utility" has been_installed in_the Operator Interface

Computer Panel system before shipment. Run the calibration routine when an alignment problem exists between the mouse pointer and the stylus contact location on the screen. You can adjust the calibration of the touch screen by: The calibration procedure is shown by degrees. In the first, From the [Program] to find [eGalaxTouch] icon then click the [Configure Utility].

Click the Page [About], you can find the information and version of the “Touch Screen Utility”	Click the Page [General], the installed USB Touch Screen Controller is shown.
	
Click the Page [Setting], you can choose the Linearization Style, either 9 Points or 25 Points.	Click the Page [Tools], you can choose [4 Points Calibration] to do 4 points alignment to match display.
	
The 4 points calibration & Linearization are completed as follows	
	

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Click [Draw Test], draw by touch pen or finger to know touch accuracy</td><td></td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Click the Page [Display]; you can select the Operation Mode.</td><td>Click the Page [Hardware], Controller Model and Firmware Version can be seen.</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Click [Hardware Setting], you can adjust Sensitivity and Delay time of touch screen</td><td>Click the Page [Edge Compensation] to adjust the Edge Parameters.</td></tr>
</table>

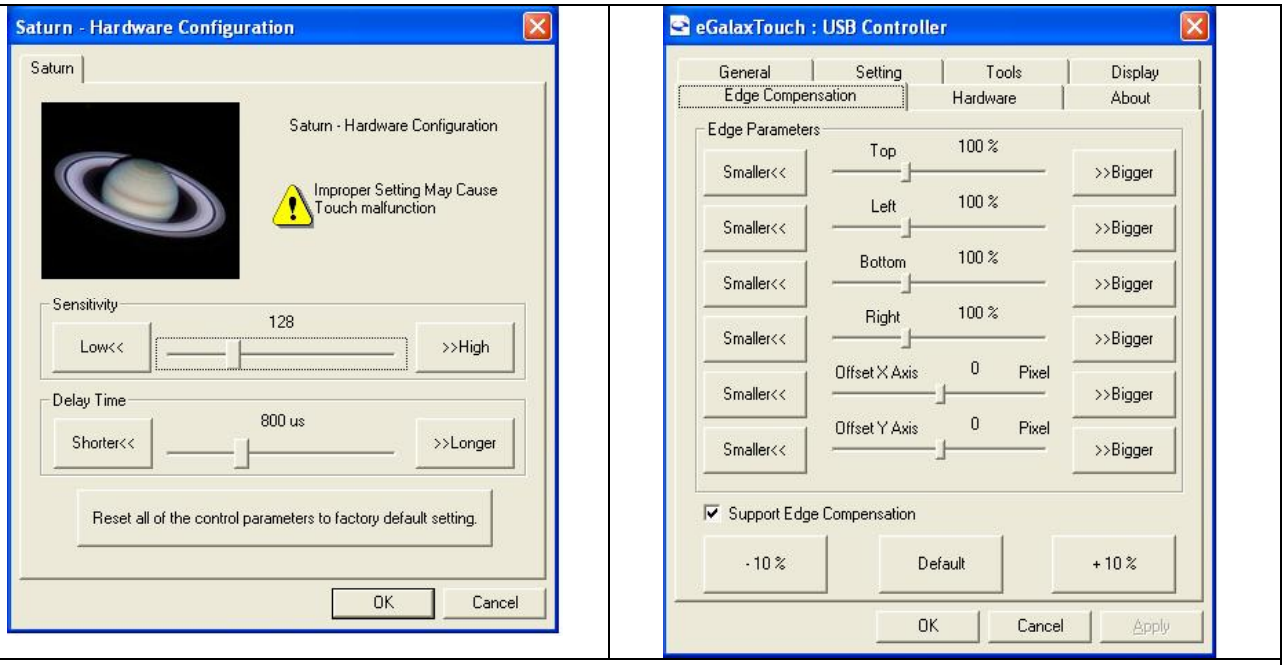


Fig.6-37：Touch calibration procedure

The front panel and the touch screen are covered by a plastic overlay and care should be taken when cleaning it.

6.5.2 Brightness Control

The “Brightness Control” icon on the notification bar shown below provides selection to adjust the brightness of the Operator Interface Computer 10"/15"/17” NEMA4 system, IP10IA99 / IP15IA99 / IP17IA99. If the icon doesn’t appear, please just click the “START” menu.

To display the “Brightness Control” window, follow these steps:

1. Click the “Brightness Control” menu to display the “Brightness Control” window.

2. Click the “Brightness Control” icon in the notification area.

3. Move the slide bar in the “Brightness Control” window to adjust the brightness.

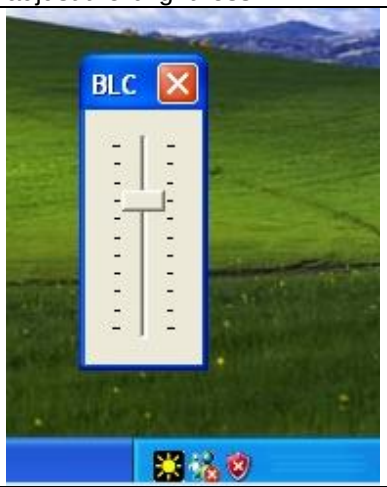


Fig.6-38：Brightness Control procedure

7. Technical Data

7.1. Product Specification

	IP10IA99 Panel PC	IP15IA99 Panel PC	IP17IA99 Panel PC
Feature	**Specification Description**	**Specification Description**	**Specification Description**
Model	IP10IA99-A1 10.4" Industrial Fan-free Panel PC	IP15IA99-A1 15" Industrial Fan-free Panel PC	IP17IA99-A1 17" Industrial Fan-free Panel PC
CPU	Intel® Atom™ 1.66 GHz N455	Intel® Atom™ 1.66 GHz N455	Intel® Atom™ 1.66 GHz N455
Chipset	Intel ICH8-M	Intel ICH8-M	Intel ICH8-M
Memory	UP to 2GB DDR3 800/1066 SDRAM (Optional) on one 240pin SO-DIMM socket	Up to 2GB DDR3 800/1066 SDRAM (Optional) on one 240pin SO-DIMM socket	UP to 2GB DDR3 800/1066 SDRAM (Optional) on one 240pin SO-DIMM socket
Storage Device	2.5" SATA HDD (Optional) - Quick change design - Screw (Knob) on service door for easy access	2.5" SATA HDD (Optional) - Quick change design - Screw (Knob) on service door for easy access	2.5" SATA HDD (Optional) - Quick change design - Screw (Knob) on service door for easy access
Solid State Disk	Compact Flash Type II up to 32GB **(Optional)** - 1x CF Type II socket with Cover - Cover on unit when CF not in use	Compact Flash Type II up to 32GB **(Optional)** - 1x CF Type II socket with Cover - Cover on unit when CF not in use	Compact Flash Type II up to 32GB **(Optional)** - 1x CF Type II socket with Cover - Cover on units when CF not in use
VGA	Intel N455 Integrated Graphics	Intel N455 Integrated Graphics	Intel N455 Integrated Graphics
Ethernet	Intel 82574L 100/1000 PCIe Gigabit Ethernet x 2	Intel 82574L 100/1000 PCIe Gigabit Ethernet x 2	Intel 82574L 100/1000 PCIe Gigabit Ethernet x 2
I/O	- 2 x RS-232/422/485 ports (COM1, 2) - 2x USB 1.1/2.0 ports - 1x VGA port - 2x Gigabit Ethernet ports - 1x 5 pin Terminal block connector (12-24V DC-In, UPS like function) - 1x System Power Switch - 1 x Reset Switch - 1 x Power LED - 1 x HDD LED	- 2 x RS-232/422/485 ports (COM1, 2) - 2x USB 1.1/2.0 ports - 1x VGA port - 2x Gigabit Ethernet ports - 1x 5-pin Terminal block connector (12-24V DC-In, 2-pin UPS like function) - 1x System Power Switch - 1 x Reset Switch - 1 x Power LED - 1 x HDD LED	- 2 x RS-232/422/485 ports (COM1, 2) - 2x USB 1.1/2.0 ports - 1x VGA port - 2x Gigabit Ethernet ports - 1x 5 pin Terminal block connector (12-24V DC-In, 2-pin UPS like function) - 1x System Power Switch - 1 x Reset Switch - 1 x Power LED - 1 x HDD LED

I/O (Extension) for Additional	- 2 x USB 1.1/2.0 ports **(Default)** - 1x RS-232 port (COM3), **(Optional)**	- 1 x RS-232 port (COM3) + 2x USB 1.1/2.0 ports, (**Default**) - 2 x RS-232 port (COM3, 4) (**Optional**) - 4x USB 1.1/2.0 ports (**Optional**)	- 1 x RS-232 port (COM3) + 2x USB 1.1/2.0 ports, (**Default**) - 2 x RS-232 port (COM3, 4) (**Optional**) - 4x USB 1.1/2.0 ports (**Optional**)
Touch Screen	5-wire resistive Touch Screen + Complete Overlay	5-wire Resistive Touch Screen + Complete Overlay	5-wire Resistive Touch Screen + Complete Overlay
LCD	-Size: 10.4" (Industrial Panel) -Resolution: 800 x 600 -Brightness: 400 cd/m^2 -Contrast Ratio: 700:1 -Viewing Angle: 140 (V) / 160 (H) -Backlight: LED -Backlight MTBF: 50,000 hrs	-Size: 15" (Industrial Panel) -Resolution: 1024 x 768 -Brightness: 400 cd/m^2 -Contrast Ratio: 700:1 -Viewing Angle: 140 (V) / 160 (H) -Backlight: LED -Backlight MTBF: 50,000 hrs	-Size: 17" (Industrial Panel) -Resolution: 1280 x 1024 -Brightness: 350 cd/m2 -Contrast Ratio: 1000:1 -Viewing Angle: 160 (V) / 170 (H) -Backlight: LED -Backlight MTBF: 50,000 hrs
Expansion function	- 1x Mini-PCIe slot	- 1x Mini-PCIe slot	- 1x Mini-PCIe slot
Operation Temp.	0 ~ 50 ℃ (HDD up to 45 ℃ ; CF up to 50 ℃)	0 ~ 50 ℃ (HDD & CF up to 50 ℃)	0 ~ 50 ℃ (HDD up to 45 ℃ ; CF up to 50 ℃)
Storage Temp.	-20 ~80 ℃	-20 ~80 ℃	-20 ~80 ℃
Relative Humidity	20~ 90% RH, 50℃ Non-condensing	20~ 90% RH, 50℃ Non-condensing	20~ 90% RH, 50℃ Non-condensing
Case/Panel Temp.	Less than 40 ℃ @ 25℃ ambient temperature (front bezel)	Less than 40 ℃ @ 25℃ ambient temperature (front bezel)	Less than 40 ℃ @ 25℃ ambient temperature (front bezel)
Weight	3.90 Kg (6.25 Kg with carton)	5.90 Kg (9.70 Kg with carton)	7.80 Kg (12.10 Kg with carton)
Dimension	314 x 253 x 50 mm (4mm Stainless Steel & 4mm Aluminum Bezel)	425.4 x 330 x 53.4 mm (4mm Stainless Steel bezel) 425.4 x 330 x 55.4 mm (6mm Aluminum bezel)	437 x 375 x 58.4 mm (6mm Stainless Steel & 6mm Aluminum Bezel)
Mounting	Panel Mount VESA Mount 75x75, 100x100	Panel Mount VESA 75x75, 100x100	Panel Mount VESA Mount 75x75, 100x100
Shock	Shock DIN EN 60068-2-27 Operating: 15G, 11 ms duration ; Storage: 50G, 11ms duration (half-sinus)	Shock DIN EN 60068-2-27 Operating: 15G, 11 ms duration ; Storage: 50G, 11ms duration (half-sinus)	Shock DIN EN 60068-2-27 Operating: 15 G 11 ms duration ; Storage: 50G, 11ms duration (half-sinus)
Vibration	Vibration DIN EN 60068-2-6 Operating: 10-500 Hz; 1G/3-axis ; Storage: 10-500 Hz: 2G/3-axis	Vibration DIN EN 60068-2-6 Operating: 10-500 Hz; 1G/3-axis ; Storage: 10-500 Hz: 2G/3-axis	Vibration DIN EN 60068-2-6 Operating: 10-500 Hz; 1G/3 axis ; Storage: 10-500 Hz: 2G/3 axis
Altitude	Operating: 10,000 ft (3,048m) ; Storage: 15,000 ft (4,622m)	Operating: 10,000 ft (3,048m) ; Storage: 15,000 ft (4,622m)	Operating: 10,000 ft (3,048m) ; Storage: 15,000 ft (4,622m)

IP Rating	IP65 / NEMA 4 Whole enclosure: IPX1 (IEC 60529 Edition 2.1 Standard)	IP65 / NEMA 4 Whole enclosure: IPX1 (IEC 60529 Edition 2.1 Standard)	IP65 / NEMA 4 Whole enclosure: IPX1 (IEC 60529 Edition 2.1 Standard)
Front Bezel	Flat Front Bezel + Overlay Complete Design Open frame mechanical design in order to change front Bezel easily 4mm Stainless Steel Bezel OR 4mm Aluminum Bezel Power switch on front Bezel must be enabled/disabled by switch Power LED on front Bezel.	Flat Front Bezel + Complete Overlay Design Open frame mechanical design in order to change front Bezel easily 4mm Stainless Steel Bezel OR 6mm Aluminum Bezel Power switch on front Bezel must be enabled/disabled by switch Power LED on front Bezel.	Flat Front Bezel + Complete Overlay Design Open frame mechanical design in order to change front Bezel easily 6mm Stainless Steel Bezel OR 6mm Aluminum Bezel Power switch on front Bezel must be enabled/disabled by switch Power LED on front Bezel.
Color	Black - Pantone 433C (Border Overlay on bezel)	Black - Pantone 433C (Border Overlay on bezel)	Black - Pantone 433C (Border Overlay on bezel)
Certification	CE/FCC Class A / UL & cUL-60950 approved	CE/FCC Class A / UL & cUL-60950 approved	CE/FCC Class A / UL & cUL-60950 approved
Power Supply	Built-in DC-to-DC power design — DC 12 ~ 24V Wide Range input (± 20%) — 5-pin Terminal Block Connector (a) 3-pin for V+ / NC / V- (b) 2-pin for UPS-like function	Built-in DC-to-DC power design — DC 12 ~ 24V wide range input (± 20%) — 5-pin Terminal Block Connector (a) 3-pin for V+ / NC / V- (b) 2-pin for UPS-like function	Built-in DC-to-DC power design — DC 12 ~ 24V wide range input (± 20%) — 5-pin Terminal block connector (a) 3-pin for V+ / NC / V- (b) 2-pin for UPS-like function
OS Support (Optional)	Windows® XP Pro for Embedded System Windows Embedded Standard 7 Windows 7 Ultimate Windows CE 6.0	Windows® XP Pro for Embedded System Windows Embedded Standard 7 Windows 7 Ultimate Windows CE 6.0	Windows® XP Pro for Embedded System Windows Embedded Standard 7 Windows 7 Ultimate Windows CE 6.0
Accessories	AC/DC 75W Adaptor (100-240V 1.2A 50-60Hz，24V 3.125A); Open Lead Cable; Panel Mount Clips, Others Optional	AC/DC 75W Adaptor (100-240V 1.2A 50-60Hz，24V 3.125A); Open Lead Cable; Panel Mount Clips, Others Optional	AC/DC 75W Adaptor (100-240V 1.2A 50-60Hz，24V 3.125A); Open Lead Cable; Panel Mount Clips, Others Optional

7.2 Mechanical Specifications

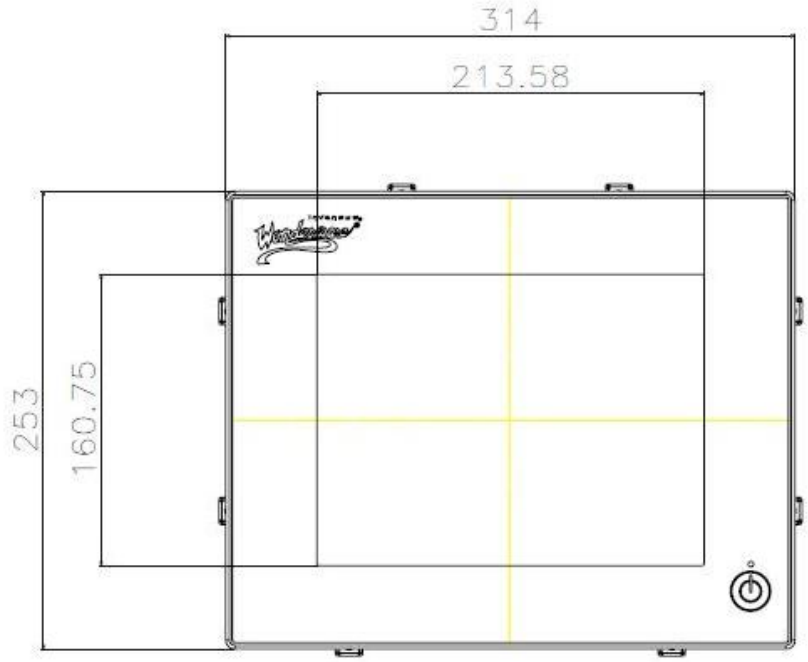


Fig.7-1：Front view of 10.4“ Panel PC system

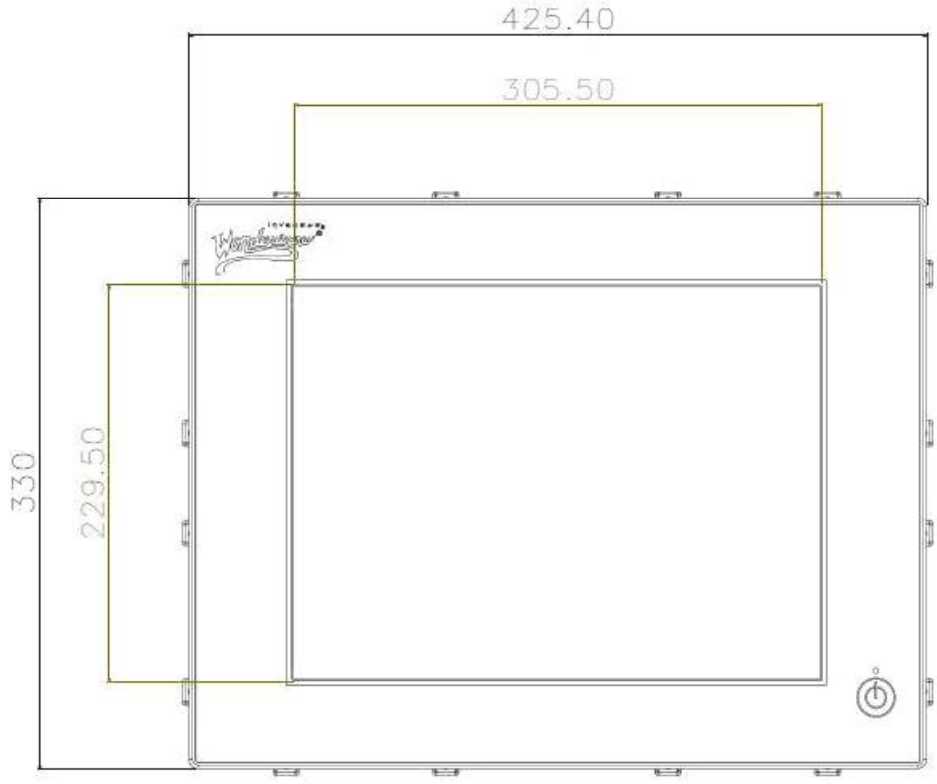


Fig.7-2：Front view of 15“ Panel PC system

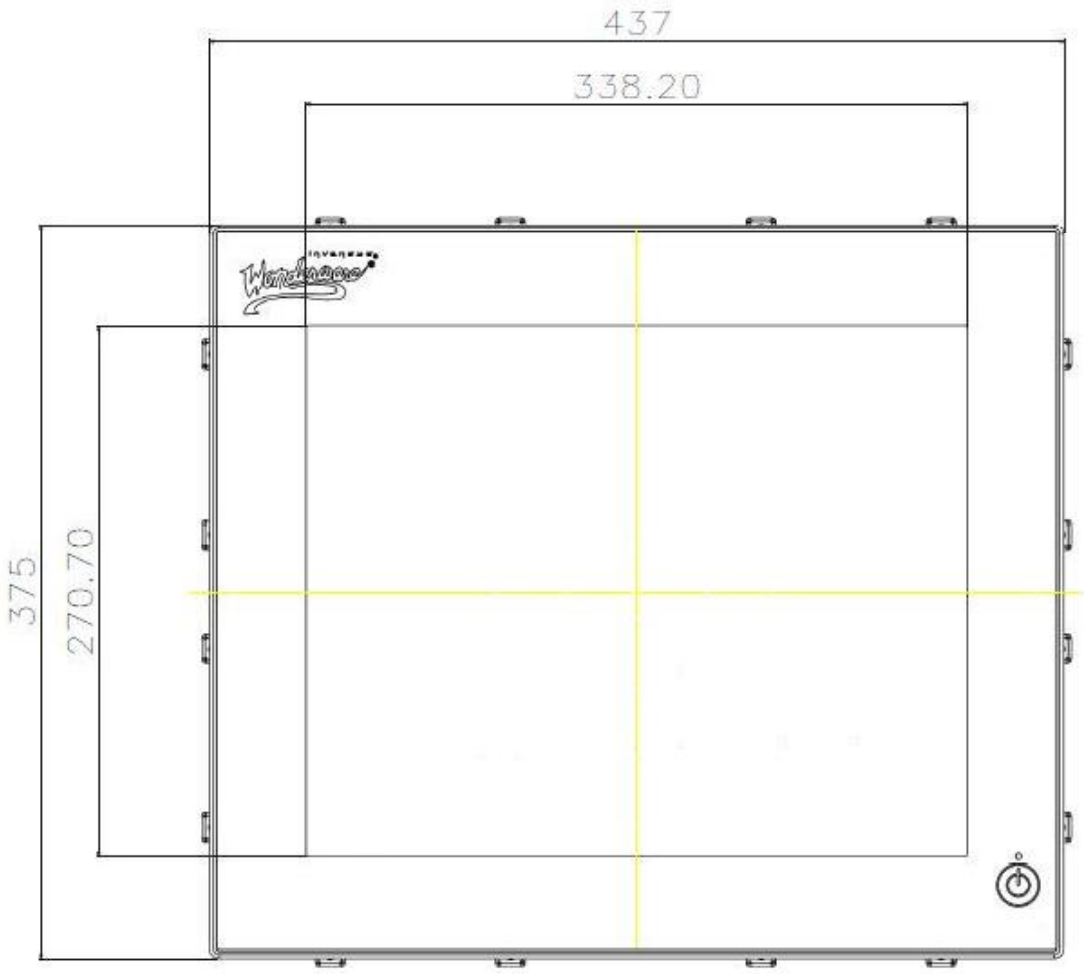


Fig.7-3：Front view of 17“ Panel PC system

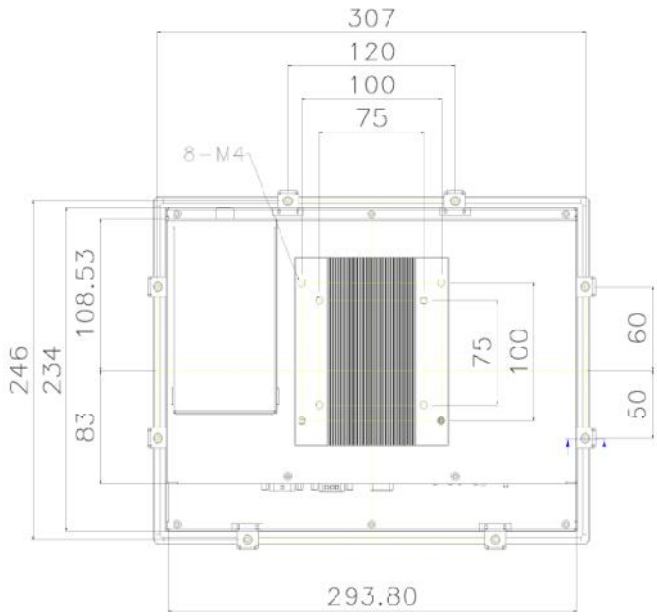


Fig.7-4-1： Rear view of 10.4” Panel PC System

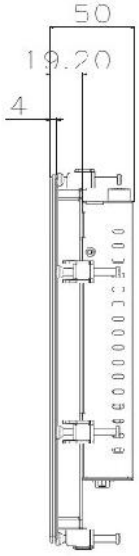


Fig.7-4-2：Right-side view of 10.4” Panel PC System

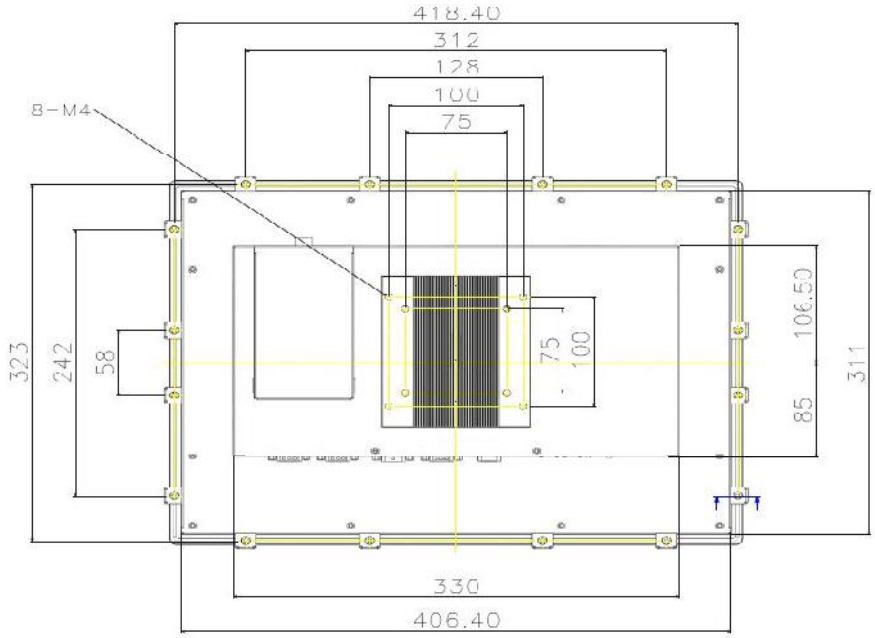


Fig.7-5-1：Rear view of 15” Panel PC System

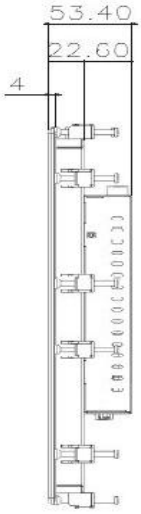


Fig.7-5-2：Right-side view of 15” Panel PC System

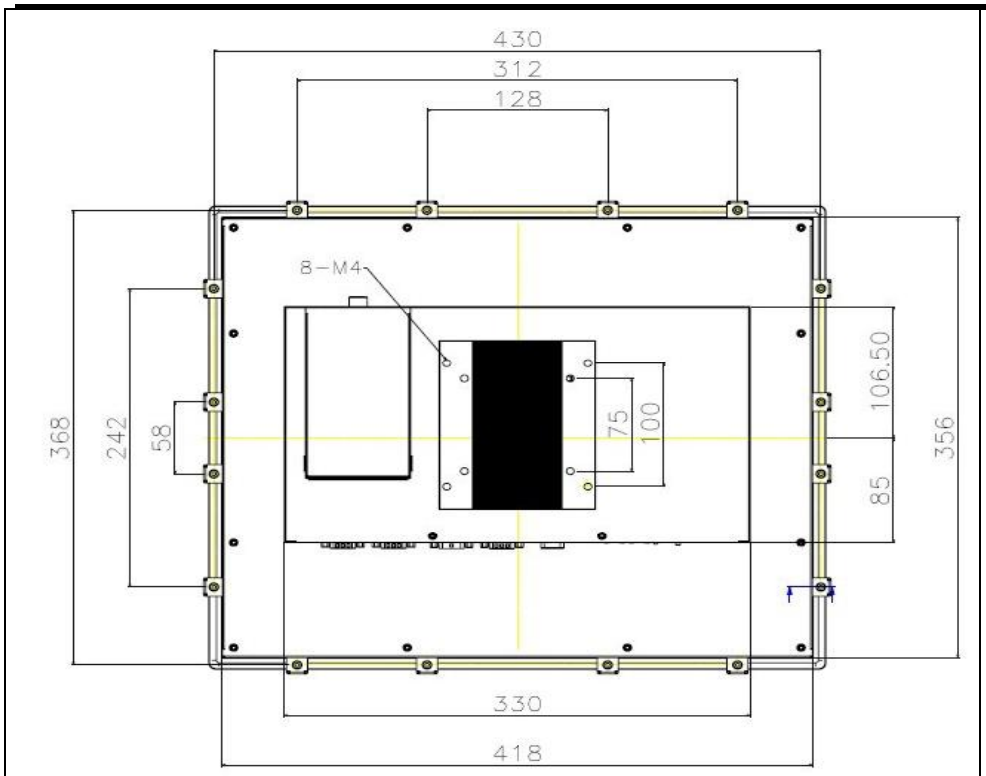


Fig.7-6-1：Rear view of 17” Panel PC System

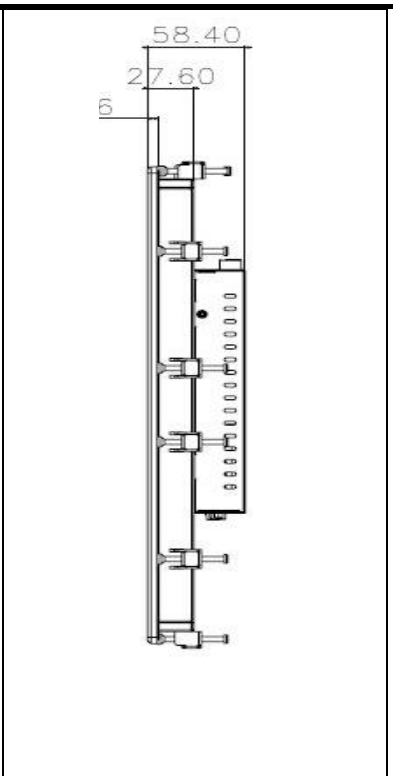


Fig.7-6-2：Right-side view of 17” Panel PC System

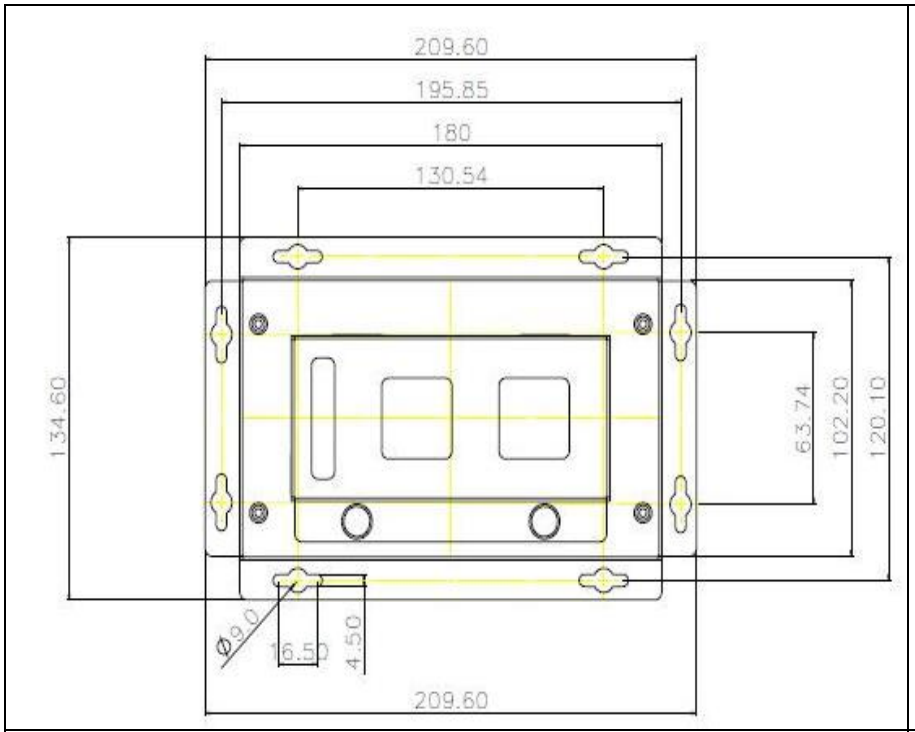


Fig.7-7-1: Wall mount kit Top View

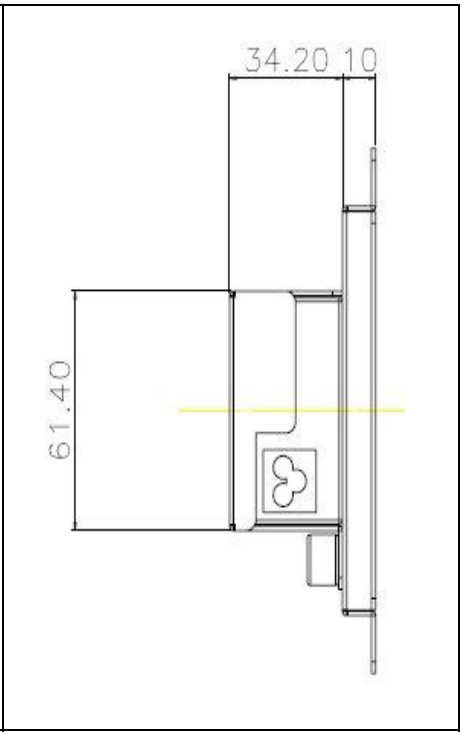


Fig.7-7-2：Wall mount kit Side view

7.3. Certifications and Standards

Standards, Certificates and Approvals

Description	Details
UL approval	UL60950-1
Low voltage directive	2006/95/EC
EMC directive	2004/108/EC
Requirements for emission	EN 61000-6-4 :2007
Requirements for interference immunity	EN 61000-6-2 :2005
FCC	FCC Part 15, Subpart B, Class A

Standards for EMC & Safety

Description	Details
Electrostatic discharge	IEC 61000-4-2: 2008
Radiated radio-frequency electromagnetic fields	IEC 61000--4-3:2010
Electrical fast transient/burst	IEC 61000-4-4:2011
Surge	IEC 61000-4-5: 2005
Conducted disturbances induced by radio-frequency fields	IEC 61000-4-6: 2008
Power frequency magnetic field	IEC 61000-4-8: 2009
Voltage dips, short interruptions and voltage variations	IEC 61000-4-11: 2004
Harmonics Current	IEC61000-3-2:2005 + A1:2008 + A2:2009
Voltage Fluctuation and Flicks	IEC61000-3-3:2008

Operating conditions

Description	Details
Temperature	0 ^{0}C to + 50 ^{0}C
Relative Humidity	20% to 90%, no condensation
Sinusoidal vibration conforming to IEC 60068-2-6	10 to 58Hz: 0.075mm amplitude 58 to 150Hz: 1g acceleration
Shock conforming to IEC 60068-2-29	15g peak, 11ms duration

8. RMA (Return Material Authorization) Service

Before returning any goods, please:

1. Contact American Industrial Systems, inc. Technical Support and request for an RMA number (Return Material Authorization).

2. Describe the behavior or reason of unit failure in order to return. Any returns for credit are subject to a restocking fee.

3. Upon confirmation of a hardware failure or valid cause for return, AIS will provide a Return Merchandise Authorization (RMA).

4. Make sure to receive an RMA number from AIS before returning any merchandise. Clearly write or mark this number on the outside of the package you are returning. Any returns without an authorization will be refused and returned to you by the shipper.

5. When returning goods, include the name and telephone number of a person whom we can contact for further explanations if necessary. Where applicable, always include all duty papers and invoice(s) associated with the item(s) in question:

Ensure that the unit is properly packed in the original box. A product packaging manual will be included with the replacement Panel or can be emailed to you in advance. Please refer to it for the necessary instructions on how to appropriately package the panel computer being returned. Failure to do so may result in the panel shifting during transit –which may result in physical damage. Physical damage from improper packaging will void your system warranty.

Ship the panel back to the address provided on the RMA documentation, via an insured carrier with freight pre-paid.

Return unit must be received to address provided within 30 days, or invoice for full amount of Panel PC will be issued.

American Industrial Systems, Inc. (AIS)

1768 McGaw Avenue

Irvine, CA 92614

1-888-485-6688

www.aispro.com

The information provided in this operations manual contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Subject to change without prior notice. Any product names mentioned may be trademarks or product designations of AIS or its suppliers, whose use by third parties for their own purposes may infringe the rights of the trademark owners.